ADDRESSING COMPLIANCE OF THE 2045 LRTP UPDATE

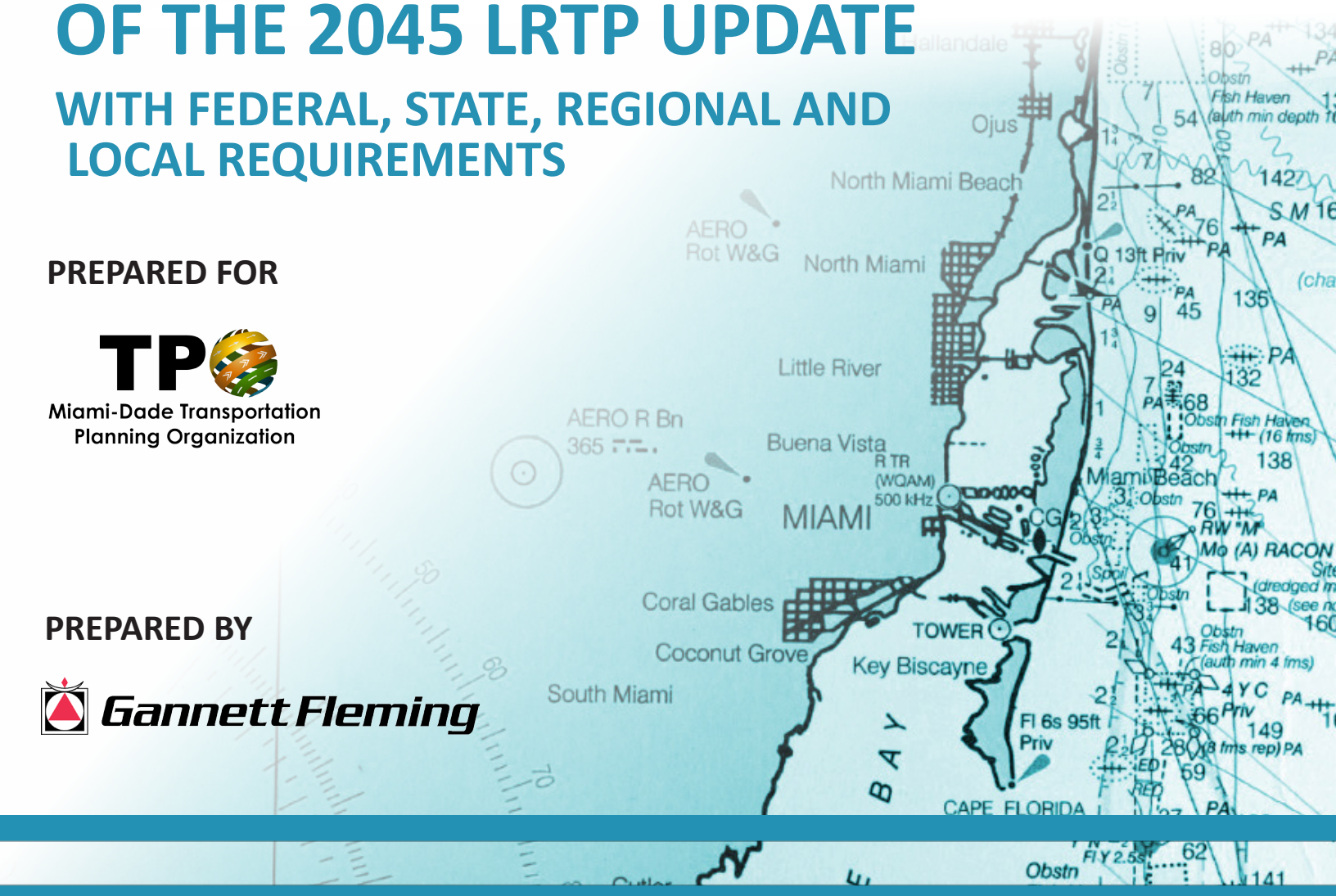
WITH FEDERAL, STATE, REGIONAL AND LOCAL REQUIREMENTS

PREPARED FOR

TPO
Miami-Dade Transportation Planning Organization

PREPARED BY

Gannett Fleming



NOVEMBER 2017

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PREPARED FOR:

MIAMI-DADE TRANSPORTATION PLANNING ORGANIZATION

111 NW 1ST STREET, SUITE 920

MIAMI, FL 33128

PREPARED BY:

GANNETT FLEMING, INC.

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ADDRESSING COMPLIANCE OF THE 2045 LRTP UPDATE WITH FEDERAL, STATE, REGIONAL AND LOCAL REQUIREMENTS

EXECUTIVE SUMMARY

As the Miami-Dade Transportation Planning Organization (TPO) initiates its preparations for the 2045 update to their Long Range Transportation Plan (LRTP), there are many factors to consider. The objective of this study is to review, evaluate, and recommend new policies, programs and trends that evolved at the federal, state, regional and local levels since development of the current 2040 Long Range Transportation Plan (LRTP). Current laws applicable to LRTPs were reviewed and evaluated. New requirements have been identified and evaluated as to how they will need to be applied to the upcoming 2045 LRTP.

At the Federal level, there are many factors to consider that have a direct impact on the planning process at the state and local level. Federal and State statutes outline the required elements of MPO Long Range Transportation Plans (LRTPs). This Executive Summary includes an overview of the requirements for the 2045 LRTP that are presented in the report, with applicable recommendations identified for TPO consideration.

Fixing America's Surface Transportation (FAST) Act

On December 4, 2015, President Barak Obama signed into law the Fixing America's Surface Transportation Act (FAST Act), which is the latest reauthorization of the Federal Surface Transportation Program since 2012, when the Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law. For fiscal years (FY) 2016-2020, the FAST Act authorizes over $305 billion in funding for surface transportation projects. Under the FAST Act, new programs have been established to facilitate freight movement and mobility, timely delivery of projects, improve the performance management process and continue performance-based planning and programming.[ES-1] The major changes under the FAST Act applicable to MPOs are highlighted below.

Performance Period Adjustment

MAP-21 required States to maintain a minimum pavement condition on Interstates (excluding bridges). If the pavement condition on any system fell below the minimum standard for two consecutive reporting

[ES-1] *Fixing America's Surface Transportation Act (FAST Act): A Summary of Highway Provisions.* U.S. Department of Transportation Federal Highway Administration, Office of Policy and Governmental Affairs. July, 2016.

periods, the State was required to identify and dedicate funding for maintenance. MAP-21 also required States and MPOs to report progress made on achieving their performance targets under the National Highway Performance Program (NHPP) and the Highway Safety Improvement Program (HSIP). Under MAP-21, if a State or MPO did not make progress on achieving their targets within two consecutive reporting periods, they were required to include a section in their performance report explaining how the State plans to achieve the targets under the NHPP. The FAST Act removed the "two-consecutive reporting period" requirement from the statute [FAST Act § 1406(a)(2); 23 USC 119(f)(1)(A)].

Under MAP-21, the States were required to show significant progress on achieving their safety performance targets within two years after the established date of the target under the HSIP. Under the FAST Act, the two-year requirement has been removed [FAST Act § 1406(a)(1) and (b); 23 USC 119(e)(7) and 148(i)].

Support for Intercity Bus and Commuter Vanpools

MAP-21 identified a list of facilities that must be considered during the planning process that enable the intermodal transportation system. The FAST Act builds on this list, by adding additional facilities such as intercity buses and commuter van pools that support intermodal transportation, which must be identified in the MPO LRTPs [23 USC 134(c)(2) & (i)(2)].

Recommendations

Coordinate with intercity bus operators and examine the locations of terminals/intermodal centers to determine multimodal connectivity of the transportation system.

Scope of Planning Process

MPOs must consider the ten Federal Planning Factors identified in 23 USC 134 (h)(1) when developing their LRTPs. Under MAP-21 and the FAST Act, the existing eight Planning Factors did not change, and under the FAST Act, two additional Planning Factors were added: improving the resiliency and reliability of the transportation system while reducing/mitigate storm water impacts and enhancing travel and tourism.

Recommendations

- ***Address the two new Federal Planning Factors in the Planning Process:***
    1. ***"Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation" and***
    2. ***"Enhance travel and tourism" in the planning process. Continue to include the Federal Planning Factors into the goals and objectives of the LRTP.***

- ***Consider locations of major hotel clusters and major tourist attractions such as the Port of Miami, Miami Beach, Miami International Airport, Miami Intermodal Center, multimodal centers, intermodal facilities, etc., and ensure there is adequate connectivity between them.***
- ***Consider expanding on the resiliency component of the LRTP through the incorporation of the results from the South Florida Climate Change Vulnerability Assessment and Adaptation Pilot Project, as well as coordination with Miami-Dade County's Local Mitigation Strategy, Floodplain and Flood zone maps, and other data related to flooding potential in the region. Consider the locations of flood zones and flood plains when evaluating projects in the LRTP. Projects located in these regions should include adequate infrastructure hardening to prepare for potential impacts.***

Resilience and Environmental Mitigation Activities

Under the FAST Act, there is an increased focus on resiliency as a requirement for MPO LRTPs. Resiliency of the transportation system must be considered, as well as activities to reduce stormwater runoff from transportation infrastructure. It is now a requirement to identify strategies to reduce the vulnerability of existing transportation infrastructure to natural disasters [23 USC 134(d)(3) & (i)(2)(G)].

Participation by Interested Parties in the Planning Process

As part of the planning process, it is a requirement that stakeholders and the public are involved, and they must be given reasonable opportunity to provide their input. Under the FAST Act, public ports and additional private transportation service providers were added to the list of interested parties. In addition, visualization techniques are a requirement to be incorporated into public participation plans in LRTPs [23 USC 134(i)(6)(A)].

Recommendations

- ***Give representatives from private providers of transportation, including intercity bus operators and employer-based commuting programs adequate notice to comment on the LRTP. Also include them in the public involvement process. This could be accomplished through the involvement of the American Intercity Bus Riders Association (AIBRA). Major providers of transportation include: Amtrak, Greyhound, Red Coach USA, Megabus, The Florida Express Bus, La Cubana, Tornado Bus Company, Florida Shuttle Now, Go Buses, and Florida Shuttle Transportation. Additional providers of transportation not part of the AIBRA include: Brightline Train, Smart Shuttle Line, and Jet Set Express.***
- ***Continue to incorporate new and innovative visualization techniques. Ideas include the incorporation of an LRTP dashboard that includes demographic and socioeconomic information, project information, and trends within the region.***

Consultation with other Planning Officials

MAP-21 required the coordination of MPOs with other officials that are responsible for various planning activities throughout the region. Under the FAST Act, officials responsible for tourism activities, as well as those responsible for reducing potential risks of natural disasters have been added [23 USC 134(g)(3)(A)].

Recommendations

- ***Regarding tourism, include a member or members from the following agencies in the LRTP planning process: the Miami-Dade Visitors Bureau and the Beacon Council, Miami-Dade County Economic Partnership***
- ***Regarding resiliency and reducing the risk of natural disasters, coordinate with the appropriate agencies to determine if they can be incorporated into the planning process. Include a member or members from the following agencies in the LRTP Steering Committee: the Miami-Dade Office of Emergency Management and the Miami-Dade Office of Resilience***

Performance-Based Planning and Programming

Building on the performance requirements established in MAP-21, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) codified a series of National Performance Management Measures applicable to MPOs through the federal rulemaking process. In 2016, FHWA issued final rules on the National Performance Management Measures to evaluate safety, pavement and bridge conditions for the National Highway Performance Program, and system performance/freight/Congestion Mitigation Air Quality (CMAQ). The safety performance measure Final Rule went into effect on April 20, 2016. The pavement and bridge condition and system performance/freight/ CMAQ Final Rules went into effect on May 20, 2017, except for certain components of the greenhouse gas measure which went into effect on September 28, 2017 [23 CFR § 490].

National Performance Management Measure- Safety	
1.	No. of Fatalities
2.	Fatality Rate per 100 million VMT
3.	No. of Serious Injuries
4.	Serious Injury Rate per 100 million VMT
5.	No. of Combined Non-Motorized Fatalities and Serious Injuries
6.	No. of Fatalities

Source: 23 CFR §924, 23 CFR § 490

National Performance Management Measure- Infrastructure	
1.	% of Interstate System Pavement in Good Condition
2.	% of Interstate System Pavement in Poor Condition
3.	% of Non-Interstate NHS Pavement in Good Condition
4.	% of Non-Interstate NHS Pavement in Poor Condition
5.	% of NHS Bridge Deck Area in Good Condition
6.	% of NHS Bridge Deck Area in Poor Condition

Source: 23 CFR § 490

National Performance Management Measure- System Performance
1. % Person-Miles Traveled on the Interstate that are Reliable
2. % Person-Miles Traveled on the Non-Interstate NHS that are Reliable
3. % Change in Tailpipe CO_2 (greenhouse gas) Emissions on the NHS Compared to the Calendar Year 2017 Level
4. Truck Travel Time Reliability (TTTR) Index
5. Annual Hours of Peak Hour Excessive Delay Per Capita
6. % Non-SOV Travel
7. Total Emissions Reduction

Source: 23 CFR § 490

Recommendations

- ***Continue using the performance management process for the development of goals and project selection. The Miami-Dade TPO should develop performance measures using available data that are quantifiable.***
- ***Continue to incorporate the goals, objectives, performance measures, and targets of other plans and studies into the planning process for the 2045 LRTP, including the Highway Safety Improvement Program (HSIP), State Highway Safety Plan (SHSP), the State Asset Management Plan for the National Highway System (NHS), the State Freight Plan, the Transit Asset Management Plan, and the Public Transportation Agency Safety Plan.***
- ***Coordinate with FDOT to identify and report on performance targets as required under MAP-21 and the FAST Act. The state targets should be listed and the TPO should state that they are adopting the state's targets. The 2045 LRTP should identify and report the performance achieved in meeting its performance targets in relation to previous reports and baseline data. Consider showing the history of each measure over time and progression toward meeting or achieving the targets.***
- ***Incorporate identified performance targets into the project evaluation criteria for the LRTP. (During project evaluation, projects that help to achieve the performance targets can be weighted higher.) Also, identify areas (locations) that fall below the targets for each performance measure and use them in developing and prioritizing projects in the LRTP. By addressing areas that fall below the target, the TPO will align investments with goals.***
- ***Identify the following which can be used for comparison between future performance reports and for use in developing the Needs Plan:***
    - ***Safety – locations with high rates of fatalities, serious injuries, and non-motorized fatalities and serious injuries***

- *Infrastructure – locations of interstate, non-interstate NHS facilities, and bridges in poor condition.*
- *System Performance – interstate and non-interstate facilities that are not reliable.*

- ***Identify other system performance measures in addition to the required National Performance Management Measures early in the planning process to ensure that the data required is available and is reported out of the travel demand model. Coordinate with the Southeast Florida Transportation Council (SEFTC) Regional Transportation Technical Advisory Committee (RTTAC) Modeling Subcommittee as to the information that can be provided by the Southeast Florida Regional Planning Model (SERPM) to measure system performance. A computer program may need to be written to obtain requested information that is not readily available from the model.***

State Statutory Requirements

In addition to federal requirements, MPOs must consider state and local requirements applicable to their planning activities. State statutory requirements that must be considered include the requirement of the consideration of future vehicle technologies such as autonomous vehicles, the consideration of innovative financing techniques during LRTP development, and the identification of "proposed transportation enhancement activities," [339.175(7), F.S.]

Recommendations

- ***Inventory existing facilities to identify gaps and those that will need to be upgraded to support Connected and Autonomous Vehicle (CAV) technology in the LRTP. This includes existing fiber optic cable, communication infrastructure, and signals.***
- ***Include estimates of "regional CAV market penetration" to plan for the predicted impact of CAV in the region.*** [ES-2]
- ***Use scenario planning in the visioning process to predict the potential impacts of CAV on infrastructure of the transportation system, and its potential impacts on security, equity, and sustainability.***
- ***Incorporate performance measures as related to the phasing of CAV infrastructure into the transportation system. Data could include: crash data and any new data associated with CAV.*** [ES-3]
- ***Identify innovative financing techniques, such as combining different funding programs to expand eligibility and reduce environmental review time for projects receiving federal funding.***

[ES-2] *Connected Vehicle Impacts on Transportation Planning.* Federal Highway Administration. June 2016.
[ES-3] *The Innovative MPO, Smart Planning, Strong Communities. A Guide for Metropolitan Transportation Planning.* Transportation for America. December 2014.

"Look comprehensively at all available funding and blend multiple sources together to deliver priority projects faster and more efficiently." [ES-4] ***In the past, the TPO has utilized a local option gas tax as a way to fund projects, and additional options include further exploration of Public Private Partnerships (P3s) as a method of alternate delivery for financing transportation projects.***

An Examination of Planning Emphasis Areas

Federal Planning Emphasis Areas (PEAs)

In 2014, the FHWA and FTA identified three federal Planning Emphasis Areas from Secretary Foxx's strategic objectives for the Surface Transportation Program. These Planning Emphasis Areas were to be incorporated into the unified planning work programs (UPWP) of MPOs, as well as statewide planning efforts nationwide. The areas are: *MAP-21 Implementation: Transition to Performance-based Planning and Programming*; *Regional Models of Cooperation: Ensure a Regional Approach to Transportation Planning by Promoting Cooperation and Coordination across Transit Agency, MPO and State Boundaries*; and *Ladders of Opportunity: Access to Essential Services*.

Recommendations

- ***To address the new Federal Emphasis Area of Ladders of Opportunity-Access to Essential Services, incorporate Equity Analysis Measures to further identify potential impacts to disadvantaged and vulnerable populations, known as Communities of Concern. The LRTP could incorporate an analysis of how projects in the LRTP can help address impacts to disadvantaged populations. Key datasets to use include:***
  - ***Families below the Poverty Level***
  - ***Households with Zero Vehicles***

Florida Planning Emphasis Areas

In 2015, the Florida Department of Transportation (FDOT) identified four Florida Planning Emphasis Areas for the state, with the intent of advancing multi-modal transportation planning. The Florida Planning Emphasis Areas are: *freight planning, transit planning, complete streets, and bicycle and pedestrian planning*. MPOs throughout Florida are encouraged to incorporate these items into their planning process as well.

[ES-4] *The Innovative MPO, Smart Planning, Strong Communities. A Guide for Metropolitan Transportation Planning.* Transportation for America. December 2014.

Recommendations

- ***Expand the incorporation of Complete Streets design principles in the planning process during the development of the 2045 LRTP. Consider creating a goal for Complete Streets in the LRTP, and incorporating complete streets into the design phase of project development.***

Additional Topics of Emphasis

The Miami-Dade TPO has also identified a series of local topics as important components to incorporate into the LRTP, that are identified in this report as additional topics of emphasis.

Recommendations

- ***Incorporate the results of health studies conducted throughout the region into the LRTP update to further explore potential health impacts. The MySidewalk Program includes a Health Impact Assessment Report for Miami-Dade County that includes a summary of statistical data related to the health and walkability of the county. Also, FHWA has developed a Transportation and Health Tool that includes data on Miami-Dade County. Consideration of this information in the LRTP project evaluation criteria could aid in the improvement of health and quality of life in the region.***

- ***Continue to focus on planning for the aging population in the region. Consider incorporating project prioritization criteria related to projects that improve accessibility and mobility for elderly populations. Also, identify the location of elderly population concentrations throughout the county and examine transit access to ensure its availability.***

Emphasis Areas in Action: A Long Range Transportation Plan Review

LRTPs from selected MPOs across the country were reviewed for noteworthy practices related to the incorporation of federal and state requirements, Federal Planning Emphasis Areas, Florida Planning Emphasis Areas and additional Topics of Emphasis.

MPO LRTPs selected for review include:

1. Plan 2040 Regional Transportation Plan: A Shared Vision for a Sustainable Region, New York Metropolitan Transportation Council (NYMTC), New York, NY
2. The Atlanta Region's Plan Transportation Element, Atlanta Regional Commission (ARC), Atlanta, GA
3. Transportation 2040: Toward a Sustainable Transportation System Plan and Update Report, Puget Sound Regional Council (PSRC), Seattle, WA
4. Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040, Metropolitan Transportation Commission (MTC), San Francisco, CA
5. 2040 Fiscally Constrained Regional Transportation Plan (RTP), Denver Regional Council of Governments (DRCOG), Denver, CO
6. The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life, Southern California Association of Governments (SCAG), Los Angeles, CA
7. Moving Forward 2040: Regional Transportation Plan, Pikes Peak Area Council of Governments (PPACG), Colorado Springs, CO

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INTRODUCTION

CHAPTER HIGHLIGHTS:

- **INTRODUCTION**
  - MPO PLANNING REQUIREMENTS: A REVIEW OF TRANSPORTATION LAW
  - AN EXAMINATION OF EMPHASIS AREAS
  - EMPHASIS AREAS IN ACTION: A LONG RANGE TRANSPORTATION PLAN REVIEW

1. Introduction

As the Miami-Dade Transportation Planning Organization (TPO) initiates its preparations for the 2045 update to their Long Range Transportation Plan (LRTP), there are many factors to consider. According to the Bureau of Economic and Business Research, the population in Miami-Dade County grew from 2.5 million in 2010 to 2.7 million in 2015,[1] and is expected to grow to over 3.6 million people by 2045. [2] It continues to be the most populous county in Florida. Employment grew from 1.2 million in 2010 to 1.4 million in 2015.[3] To accommodate projected growth, the region must strategically prioritize its investments in transportation infrastructure. This strategic planning is directly impacted by the continually changing funding availability and increasing demand.

The objective of this study is to review, evaluate, suggest and recommend new policies, programs and trends that have evolved at the federal, state, regional and local levels since development of the current 2040 Long Range Transportation Plan (LRTP). Current law applicable to LRTPs has been reviewed and evaluated. New requirements have been identified and evaluated as to how they will need to be applied to the upcoming 2045 LRTP.

MPO Planning Requirements: A Review of Transportation Law

At the Federal level, there are many factors to consider that have a direct impact on the planning process at the state and local level. On December 4, 2015, President Barak Obama signed into law the Fixing America's Surface Transportation Act (FAST Act), which is the latest reauthorization of the Federal Surface Transportation Program since 2012, when the Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law. For fiscal years (FY) 2016-2020, the FAST Act authorizes over $305 billion in funding for surface transportation projects. Under the FAST Act, new programs have been established to

[1] *Florida Estimates of Population 2015*, Bureau of Economic and Business Research (BEBR), University of Florida. April 2015.

[2] *Population Projections by Age, Sex, Race, and Hispanic Origin for Florida and Its Counties, 2020-2045, With Estimates for 2016*, Rayer, Stefan and Wang, Ying. Bureau of Economic and Business Research (BEBR), University of Florida. June 2017.

[3] *Miami-Dade County Profiles: American Community Survey*. Department of Regulatory & Economic Resources- Planning Research & Economic Analysis Section. October 2015 and September 2016.

facilitate freight movement and mobility, timely delivery of projects, improve the performance management process and continue performance-based planning and programming.[4]

The FAST Act also included two new Federal Planning Factors that must be considered during the planning process. The Federal Planning Factors have been established under successive reauthorizations of the Surface Transportation Program. Under the FAST Act: (1) "Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation;" and (2) "Enhance travel and tourism" have been added to the list of Federal Planning Factors, [23 USC 134(h)(1)].

Building on the performance requirements established in MAP-21, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) codified a series of National Performance Management Measures applicable to MPOs through the federal rulemaking process. In 2016, FHWA issued final rules on the National Performance Management Measures to evaluate safety, pavement and bridge conditions for the National Highway Performance Program, and system performance/freight/Congestion Mitigation Air Quality (CMAQ). The safety performance measure Final Rule went into effect on April 20, 2016. The pavement and bridge condition and system performance/freight/ CMAQ Final Rules went into effect on May 20, 2017, except for certain components of the greenhouse gas measure which went into effect on September 28, 2017 [23 CFR § 490]. However, FHWA has initiated the process to repeal the Green House Gas (GHG) measure, with the goal of issuing a Final Rule to repeal the measure in spring of 2018.

Additionally, in 2016, FTA issued a Final Rule on Transit Asset Management to evaluate "state of good repair of transit agency vehicles, facilities, and equipment," which went into effect October 1, 2016 [49 CFR §625,630].

[4] *Fixing America's Surface Transportation Act (FAST Act): A Summary of Highway Provisions.* U.S. Department of Transportation Federal Highway Administration, Office of Policy and Governmental Affairs. July, 2016.

As related to Statewide and MPO planning activities, FHWA issued a Final Rule, effective June 27, 2016, entitled "Statewide and Nonmetropolitan Transportation Planning; Metropolitan Transportation Planning." The rule outlines additional requirements for states and MPOs related to transportation planning activities.

FHWA and FTA issued another Final Rule, effective January 19, 2017, entitled "Metropolitan Planning Organization Coordination and Planning Area Reform," which set new guidelines for metropolitan planning organization coordination and planning area boundaries. This Final Rule would have caused many MPOs to modify their planning areas based on urbanized area boundaries, with one LRTP and one transportation improvement program (TIP) per metropolitan urbanized area. This would combine and/or consolidate multiple MPOs representing highly populated areas. The Final Rule was repealed by Public Law 115-33, which was signed into law on May 12, 2017.

In addition to federal requirements, MPOs must consider state and local requirements applicable to their planning activities. State statutory requirements that must be considered include the requirement of the consideration of future vehicle technologies such as autonomous vehicles, the consideration of innovative financing techniques during LRTP development, and the identification of "proposed transportation enhancement activities," [339.175(7), F.S.] The State of Florida's 2017 legislative session included the passing of HB 221 and SB 340. This bill creates uniform statewide guidelines on rideshare programs and Transportation Network Companies (TNCs), however it has been tabled indefinitely.

An Examination of Planning Emphasis Areas

In 2014, the FHWA and FTA identified three federal Planning Emphasis Areas from Secretary Foxx's strategic objectives for the Surface Transportation Program. These Planning Emphasis Areas were to be incorporated into the unified planning work programs (UPWP) of MPOs, as well as statewide planning efforts nationwide. The areas are: *MAP-21 Implementation: Transition to Performance-based Planning and Programming*; *Regional Models of Cooperation: Ensure a Regional Approach to Transportation Planning by Promoting Cooperation and Coordination across Transit Agency, MPO and State Boundaries*; and *Ladders of Opportunity: Access to Essential Services*. In 2015, the Florida Department of Transportation (FDOT) identified four Florida Planning Emphasis Areas for the state, with the intent of advancing multi-modal transportation planning. The Florida Planning Emphasis Areas are: *freight planning, transit planning, complete streets, and bicycle and pedestrian planning*. MPOs throughout Florida are encouraged to incorporate these items into their planning process as well.

In addition to the Federal and Florida Planning Emphasis Areas identified by FHWA/FTA and FDOT, along with all of the other topics that must be incorporated into the LRTP as part of federal and state requirements, the Miami-Dade TPO has also identified a series of local topics as important components

to incorporate into the LRTP, that are identified in this report as additional topics of emphasis. All of these items are further explored throughout the text.

Emphasis Areas in Action: A Long Range Transportation Plan Review

LRTPs from selected MPOs across the country were reviewed for noteworthy practices related to the incorporation of federal and state requirements, Federal Planning Emphasis Areas, Florida Planning Emphasis Areas, and additional Topics of Emphasis. While the LRTPs reviewed do come from MPOs located in other states, the requirements for LRTPs within the state of Florida may also be addressed by them as well. After an initial review, seven LRTPs were selected and approved by the Miami-Dade TPO for inclusion in this report. Criteria used for review of the LRTPs include an examination of how the Federal Planning Factors are addressed in the LRTP, as well as the Federal Planning Emphasis Areas, Florida Planning Emphasis Areas, and additional Topics of Emphasis that the TPO has identified as important to their regional planning process.

MPO LRTPs selected for review include:

1. Plan 2040 Regional Transportation Plan: A Shared Vision for a Sustainable Region, New York Metropolitan Transportation Council (NYMTC), New York, NY
2. The Atlanta Region's Plan Transportation Element, Atlanta Regional Commission (ARC), Atlanta, GA
3. Transportation 2040: Toward a Sustainable Transportation System Plan and Update Report, Puget Sound Regional Council (PSRC), Seattle, WA
4. Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040, Metropolitan Transportation Commission (MTC), San Francisco, CA
5. 2040 Fiscally Constrained Regional Transportation Plan (RTP), Denver Regional Council of Governments (DRCOG), Denver, CO
6. The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life, Southern California Association of Governments (SCAG), Los Angeles, CA
7. Moving Forward 2040: Regional Transportation Plan, Pikes Peak Area Council of Governments (PPACG), Colorado Springs, CO

In addition, the Miami-Dade 2040 LRTP was reviewed. Based on how the identified elements are addressed in the Miami-Dade 2040 LRTP, and considering the research conducted on other LRTPs across the nation, Plan Elements for Future Consideration have been presented at the end of the report for consideration by the Miami-Dade TPO.

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ADDRESSING COMPLIANCE OF THE 2045 LRTP UPDATE WITH FEDERAL, STATE, REGIONAL AND LOCAL REQUIREMENTS

02

MPO PLANNING REQUIREMENTS:

A REVIEW OF TRANSPORTATION LAW

CHAPTER HIGHLIGHTS:

- **LRTP DEVELOPMENT REQUIREMENTS**
- **MAP-21 VS. FAST ACT**
  - FREIGHT PERFORMANCE
  - PERFORMANCE PERIOD ADJUSTMENT
  - SUPPORT FOR INTERCITY BUS AND COMMUTER VANPOOLS
  - SCOPE OF THE PLANNING PROCESS
  - RESILIENCE AND ENVIRONMENTAL MITIGATION ACTIVITIES
  - PARTICIPATION BY INTERESTED PARTIES IN THE PLANNING PROCESS
  - CONSULTATION WITH OTHER PLANNING OFFICIALS
- **PERFORMANCE-BASED PLANNING AND PROGRAMMING**
  - NATIONAL PERFORMANCE MANAGEMENT MEASURES
- **STATE STATUTORY REQUIREMENTS**

2. MPO Planning Requirements: A Review of Transportation Law

LRTP Development Requirements

Federal and State statutes outline the required elements of MPO Long Range Transportation Plans (LRTPs). These requirements were identified in the Miami-Dade 2040 LRTP.

In general, an LRTP must include:

- Identification of Transportation Facilities
- Performance Measures and Targets
- System Performance Report
- Mitigation Activities
- Financial Plan
- Operational and Management Strategies
- Capital Investment and Other Strategies
- Transportation and Transit Enhancement Activities
- Coordination with Clean Air Act Agencies (Only for those areas not in attainment)
- Public Participation Plan
- Optional Scenario Development Component can be included but is not required [49 USC 5303 (i)(2)]

The number of requirements have grown over the years with each successive reauthorization of the Federal Surface Transportation Program. The United States Department of Transportation (USDOT) adopted Federal Planning Emphasis Areas for State DOTs and the Florida Department of Transportation (FDOT) adopted Florida Planning Emphasis Areas for MPOs in Florida to incorporate into their planning process. Separate from the Federal and Florida Planning Emphasis Areas, a summary was developed by FHWA and FTA called "FHWA's Strategies for Implementing Requirements for LRTP Update for the Florida MPOs," otherwise known as the "FHWA Expectations Letter." This document was originally provided to Florida's MPOs in 2012 during the last update cycle of the LRTPs. It was developed to provide further clarification to Florida MPOs on what is "expected" to be addressed in LRTPs. In addition, it identifies "Emerging Issues" that should be given priority. While including these considerations is not a requirement of MPOs, these issues have been receiving increasing attention and should be considered for incorporation in the planning process. The "Emerging Issues" listed in the 2012 FHWA Expectations Letter are: "Safety and Transit Asset Management, Performance Management, Freight, Sustainable Transportation and Context Sensitive Solutions, Linking Planning and NEPA, Climate Change, and Scenario

Planning."[5] An updated Expectations Letter is expected to be distributed to the MPOs for the next LRTP update cycle.

In 2014, the FDOT and FHWA issued guidance on "LRTP Consistency Review for STIP Amendments and NEPA Approval." The guidance document sets "thresholds" that trigger amendments for project changes in the LRTP. For a final NEPA document to be signed "the project must be described within the LRTP. The description, at a minimum, must include roadway identification, termini, implementation time frame and full project cost. Ideally, all phases of the project will be funded in the LRTP Cost Feasible Plan. At least one subsequent phase of the entire project must be in the LRTP Cost Feasible Plan. If the next phase for the entire project is not in the Cost Feasible Plan, then at least one segment of the project must be fully funded in the Cost Feasible Plan through construction. The information that is then displayed in the TIP/STIP would depend on the timing of the programming for the next phase of the project implementation."[6]

MPO planning requirements come from multiple sources (i.e. federal, state, and local levels). **Figure 1: Federal and State Planning Requirements and Expectations** shows where the major sources of federal and state planning requirements come from and how they are organized. This section explores these requirements, and reviews the changes to transportation legislation that have a direct or indirect impact on MPOs, starting with an outline of the major changes between MAP-21 and the FAST Act. This section also includes a review of performance-based planning requirements of MPOs, followed by state statutory requirements.

[5] *Federal Strategies for Implementing Requirements for LRTP Update for the Florida MPOs*. Federal Highway Administration and Federal Transit Administration. November 2012.

[6] *LRTP Consistency Review for STIP Amendments and NEPA Approval.* Office of Policy Planning, FDOT, Office of Project Development, FHWA. March 5, 2014.

Figure 1: Federal and State Planning Requirements and Expectations

United States Code

MAP-21/FAST Act

Federal Planning Factors

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and nonmotorized users;
- Increase the security of the transportation system for motorized and nonmotorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation;
- Emphasize the preservation of the existing transportation system;
- Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and **
- Enhance travel and tourism. **

** New Planning Factors established under the FAST Act.

[23 USC 134(h)(1)]

MAP-21 National Goals

Safety - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.

Infrastructure Condition - To maintain the highway infrastructure asset system in a state of good repair

Congestion Reduction - To achieve a significant reduction in congestion on the National Highway System

System Reliability - To improve the efficiency of the surface transportation system

Freight Movement and Economic Vitality - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development

Environmental Sustainability - To enhance the performance of the transportation system while protecting and enhancing the natural environment.

Reduced Project Delivery Delays - To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

[23 USC 150(b)]

Code of Federal Regulations

USDOT

National Performance Management Measures

Safety Performance Measures

1. No. of Fatalities
2. Fatality Rate per 100 million VMT
3. No. of Serious Injuries
4. Serious Injury Rate per 100 million VMT
5. No. of Combined Non-Motorized Fatalities and Serious Injuries

Infrastructure Performance Measures

1. % of Interstate System Pavement in Good Condition
2. % of Interstate System Pavement in Poor Condition
3. % of Non-Interstate NHS Pavement in Good Condition
4. % of Non-Interstate NHS Pavement in Poor Condition
5. % of NHS Bridge Deck Area in Good Condition
6. % of NHS Bridge Deck Area in Poor Condition

System Performance Measures

1. % Person-Miles Traveled on the Interstate that are Reliable
2. % Person-Miles Traveled on the Non-Interstate NHS that are Reliable
3. % Change in Tailpipe CO_2 (greenhouse gas) Emissions on the NHS Compared to the Calendar Year 2017 Level
4. Truck Travel Time Reliability (TTTR) Index
5. Annual Hours of Peak Hour Excessive Delay Per Capita
6. % Non-SOV Travel
7. Total Emissions Reduction

[23 CFR §924, 23 CFR § 490]

USDOT

FHWA Expectations Letter
Requirements and Emerging Issues
Currently as of Nov, 2012. A new Expectations Letter will likely be released in 2018.

FHWA/FTA- Federal Planning Emphasis Areas 2015

1. **MAP-21 Implementation:** Transition to Performance-based Planning and Programming
2. **Regional Models of Cooperation:** Ensure a Regional Approach to Transportation Planning by Promoting Cooperation and Coordination across Transit Agency, MPO and State Boundaries
3. **Ladders of Opportunity:** Access to Essential Services

Florida Statutory Requirements

LRTP required elements include:

1. Innovative Financing Techniques
2. Planning For Future Technologies
3. Indicate Proposed Transportation Enhancement Activities

[339.175(7), F.S.]

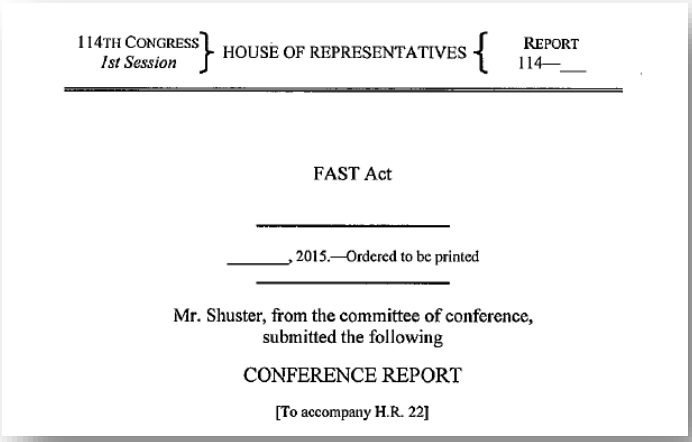
FDOT

Florida Planning Emphasis Areas 2015

1. Freight Planning
2. Transit Planning
3. Complete Streets
4. Bicycle/Pedestrian

MAP-21 vs. FAST Act

The most recent reauthorization of the Federal Surface Transportation Program occurred on December 4, 2015, when President Barack Obama signed the Fixing American's Surface Transportation Act (FAST Act), Public Law 114-94. This act will fund the Surface Transportation Program from 2016 through 2020, and authorizes over $305 billion in funding for surface transportation projects; an average of $56.2 billion per year. Under the FAST Act, new programs have been established to facilitate freight movement and mobility, timely delivery of projects, improve the performance management process and continue performance-based planning and programming.[7] The FAST Act builds on the Moving Ahead for Progress in the 21st Century Act (MAP-21), which was signed into law in 2012, and provided $105 billion in funding for transportation projects; an average of $52.5 billion per year[8]. MAP-21 included various provisions related to metropolitan planning and programming, specifically new performance reporting requirements. The components of MAP-21 improve and enhance the transportation system nationwide through the development of a system that focuses on safety, reducing delay, and improving mobility of people and freight. Per FHWA, the FAST Act builds on the policies established under MAP-21. The major changes between MAP-21 and the FAST Act are outlined below, as related to MPO long range planning. A more in-depth review of the changes between MAP-21 and the FAST Act can be found in **Appendix 1**. Unless specifically outlined below and in **Appendix 1**, the FAST Act continues the other provisions outlined under the Metropolitan Planning Program and the Performance Management Program related to MPO long range planning activities.[9]



114TH CONGRESS } HOUSE OF REPRESENTATIVES { REPORT
1st Session } { 114—___

FAST Act

_____, 2015.—Ordered to be printed

Mr. Shuster, from the committee of conference, submitted the following

CONFERENCE REPORT

[To accompany H.R. 22]

Source: Public Law 114-94

FAST Act: Freight Performance

MAP-21 established the requirement for the development of performance measures under several different categories. This requirement was carried on through the FAST Act. One of the

[7] *Fixing America's Surface Transportation Act (FAST Act): A Summary of Highway Provisions.* U.S. Department of Transportation Federal Highway Administration, Office of Policy and Governmental Affairs. July, 2016.

[8] *FAST Act Reauthorization Proposal,* National Association of Regional Councils. http://narc.org/wp-content/uploads/FAST-Act-MAP-21-Comparison-2015-12-3-FINAL.pdf

[9] *Fixing America's Surface Transportation Act (FAST Act): A Summary of Highway Provisions.* U.S. Department of Transportation Federal Highway Administration, Office of Policy and Governmental Affairs. July, 2016.

required categories was freight. The FAST Act builds on the freight measure requirements established under MAP-21 by requiring a State to outline the actions it will take to achieve the freight performance targets in its next performance report to USDOT, if it does not meet its freight performance targets within two years after establishment of the targets. "If the Administrator determines that a State has failed to meet (or to make significant progress toward meeting) its freight performance targets within two years after the establishment of the targets, the State shall include in the next report submitted under section 150(e) a description of the actions the State will undertake to achieve the targets, including (1) an identification of significant freight system trends, needs, and issues within the State (2) a description of the freight policies and strategies that will guide the freight-related transportation investments of the State; (3) an inventory of freight bottlenecks within the State and a description of the ways in which the State is allocating national highway freight program funds to improve those bottlenecks; and (4) a description of the actions the State will undertake to meet the performance targets of the State," [FAST Act § 1116; 23 USC 167(j)]. While the MPOs are not required to establish freight performance targets, it is important for them to be aware of the requirements at the state level, especially since freight is a Florida Planning Emphasis Area.

FAST Act: Performance Period Adjustment

MAP-21 also required States to maintain a minimum pavement condition on Interstates (excluding bridges). If the pavement condition on any system fell below the minimum standard for two consecutive reporting periods, the State was required to identify and dedicate funding for maintenance. The FAST Act removed the "two-consecutive reporting period" requirement from the statute [FAST Act § 1406(a)(2); 23 USC 119(f)(1)(A)].

MAP-21 also required States and MPOs to report progress made on achieving their performance targets under the National Highway Performance Program (NHPP) and the Highway Safety Improvement Program (HSIP). Under MAP-21, if a State or MPO did not make progress on achieving their targets within two consecutive reporting periods, they were required to include a section in their performance report explaining how the State plans to achieve the targets under the NHPP. The FAST Act modifies this reporting period by removing the "two-consecutive reporting period" requirement from the statute here as well.

Under MAP-21, the States were required to show significant progress on achieving their safety performance targets within two years after the established date of the target under the HSIP. Under the FAST Act, this requirement has been removed [FAST Act § 1406(a)(1) and (b); 23 USC 119(e)(7) and 148(i)].

FAST Act: Support for Intercity Bus and Commuter Vanpools

MAP-21 identified a list of facilities that must be considered during the planning process that enable the intermodal transportation system. The FAST Act builds on this list, by adding additional facilities such as

intercity buses and commuter van pools that support intermodal transportation, which must be identified in the MPO LRTPs [23 USC 134(c)(2) & (i)(2)]. "The plan must now include—consideration of the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost-effective manner; and strategies and investments that preserve and enhance intercity bus systems (including those that are privately owned and operated," [23 USC 134(i)(2)(H)].

FAST Act: Scope of Planning Process

MPOs must consider the ten Federal Planning Factors identified in 23 USC 134 (h)(1) when developing their LRTPs. Originally sixteen Federal Planning Factors were established under the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, which were consolidated into seven broad areas under the Transportation Equity Act for the 21st Century (TEA-21).[10] Under TEA-21, the safety and security Federal Planning Factors were combined into one Planning Factor. Under the Safe, Accountable, Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the safety and security Federal Planning Factors were split into two separate Planning Factors, making a total of eight Federal Planning Factors.[11] Under MAP-21 and the FAST Act, the existing Planning Factors did not change, and under the FAST Act, two additional Planning Factors were added: improving the resiliency and reliability of the transportation system while reducing/mitigate storm water impacts and enhancing travel and tourism.

All ten Federal Planning Factors that MPOs must incorporate into their planning process are identified below:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency,
2. Increase the safety of the transportation system for motorized and non-motorized users,
3. Increase the security of the transportation system for motorized and non-motorized users,
4. Increase the accessibility and mobility of people and for freight,
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns,
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operation,
8. Emphasize the preservation of the existing transportation system,

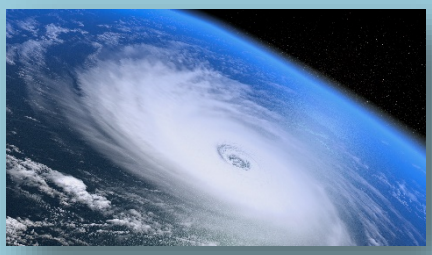
[10] *TEA-21: Transportation Equity Act for the 21st Century.* Federal Highway Administration. https://www.fhwa.dot.gov/tea21/factsheets/metropln.htm

[11] *Safe, Accountable, Flexible Efficient Transportation Equity Act: A Legacy for Users.* Federal Highway Administration. https://www.fhwa.dot.gov/safetealu/factsheets/mp.htm

9. Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation, and
10. Enhance travel and tourism [23 USC 134(h)(1)].

FAST Act: Resilience and Environmental Mitigation Activities

Under the FAST Act, there is an increased focus on resiliency as a requirement for MPO LRTPs. Resiliency of the transportation system must be considered, as well as activities to reduce stormwater runoff from transportation infrastructure. It is now a requirement to identify strategies to reduce the vulnerability of existing transportation infrastructure to natural disasters [23 USC 134(d)(3) & (i)(2)(G)].



FAST Act: Participation by Interested Parties in the Planning Process

As part of the planning process, it is a requirement that stakeholders and the public are involved, and they must be given reasonable opportunity to provide there input. A list of interested parties includes: "citizens, affected public agencies, representatives of public transportation employees, public ports, freight shippers, providers of freight transportation services, private providers of transportation (including intercity bus operators, employer-based commuting programs, such as a carpool program, vanpool program, transit benefit program, parking cash-out program, shuttle program, or telework program), representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan," [23 USC 134(i)(6)(A)]. Under the FAST Act, public ports and additional private transportation service providers were added. In addition, visualization techniques are a requirement to be incorporated into public participation plans in LRTPs.

FAST Act: Consultation with other Planning Officials

MAP-21 required the coordination of MPOs with other officials that are responsible for various planning activities throughout the region. Under the FAST Act, officials responsible for tourism activities, as well as those responsible for reducing potential risks of natural disasters have been added [23 USC 134(g)(3)(A)].

Performance-Based Planning and Programming

Performance reporting is a requirement for State DOTs and MPOs. The incorporation of performance measures is key to the development of the LRTP. The original requirements for the incorporation of a performance-based planning process were established under MAP-21. It is important to note that performance-based planning exists at two levels: the system and project level. At the system level, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have issued Final Rules that include National Performance Management Measures that the State DOTs and MPOs are required to incorporate into their planning process. The National Performance Management Measures were developed to address the National Goals established under MAP-21, which are identified below in **Table 1: National Goals.**

Table 1: National Goals

Goal Area	National goal
Safety	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
Infrastructure condition	To maintain the highway infrastructure asset system in a state of good repair
Congestion reduction	To achieve a significant reduction in congestion on the National Highway System
System reliability	To improve the efficiency of the surface transportation system
Freight movement and economic vitality	To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
Environmental sustainability	To enhance the performance of the transportation system while protecting and enhancing the natural environment
Reduced project delivery delays	To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

Source: [23 USC 150(b)]

The LRTP is required to incorporate a performance-based approach that addresses the National Performance Management Measures and the National Goals [23 CFR 134 (i)]. The Federal Rules that establish the National Performance Management Measures applicable to MPOs are:

- **Infrastructure**- Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program [23 CFR § 490]
- **Safety-** Highway Safety Improvement Program/Safety Performance Management Measures [23 CFR §924, 23 CFR § 490]

- **System Performance-** Assessing Performance of the National Highway system, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program [23 CFR § 490]

An LRTP is required to include a system level performance report that evaluates performance of the entire transportation system based on the performance targets established to address the National Performance Management Measures. The system level performance report must also address the National Goals [49 USC 5303(i)(2)(C)]. In addition to the required National Performance Management Measures, the MPO can elect to include additional performance measures at the project level that can be used to evaluate projects included in the LRTP. The incorporation of performance measures is important to aid in making informed decisions about strategic investments in the LRTP, by providing a method of comparing alternative scenarios based on implementing projects and evaluating their success in achieving the plan's goals and objectives.[12] In the LRTP, performance measures can be used to evaluate projects included in the Needs Plan for inclusion in the Cost Feasible Plan.

A performance-based plan must report baseline conditions, which includes the latest estimates of socioeconomic and demographic data, an inventory of the existing transportation system.[12] It should also consider other applicable plans, such as the "Highway Safety Improvement Program (HSIP), State Highway Safety Plan (SHSP), the State Asset Management Plan for the National Highway System (NHS), the State Freight Plan, the Transit Asset Management Plan, and the Public Transportation Agency Safety Plan," [23 CFR 450.306(d)(4)].

[12] *Model Long-Range Transportation Plans: A Guide for Incorporating Performance-Based Planning*. Federal Highway Administration. August 2014.

National Performance Management Measures

Building on the performance requirements established in MAP-21, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) identified National Performance Management Measures that have been incorporated into a series of Final Rules applicable to MPOs. Once a Final Rule is issued, the State DOTs have until the identified date in each measure to establish their targets to meet the identified National Performance Management Measures. Once the states have established their targets, the MPOs must set targets within 180 days of that date. States and MPOs are required to coordinate together on how to best to report annual progress [49 USC 5303(h)(2)(C)]. MPOs shall report baseline condition/performance and progress toward the achievement of their targets in the system performance report in their LRTP [23 CFR § 490]. The National Performance Management Measures applicable to MPOs are explored further below.

Infrastructure

In 2016, FHWA issued a Final Rule entitled "National Performance Management Measures; Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program," that included National Performance Management Measures to evaluate the pavement and bridge conditions on the National Highway System (NHS) [23 CFR § 490]. The Rule was effective as of May 20, 2017. State DOTs are required to set targets by May 20, 2018, and MPOs are required to set targets by November 16, 2018. The National Performance Management Measures associated with this rule are identified in **Table 2: National Performance Management Measures – Infrastructure.** State DOTs and MPOs are required to establish 2-year and 4-year targets, and MPOs must establish targets by either supporting the statewide target, or defining a target unique to the MPO. MPOs are not required to provide a separate report to FHWA, however, State DOTs and MPOs will need to coordinate and mutually agree to an established reporting process. Coordination will be required between State DOTs and MPOs if a State adjusts its 4-year target at the midpoint of the performance period [23 CFR § 490].

Table 2: National Performance Management Measures - Infrastructure

National Performance Management Measure- Infrastructure	Applies To
1. % of Interstate System Pavement in Good Condition	Interstate System
2. % of Interstate System Pavement in Poor Condition	Interstate System
3. % of Non-Interstate NHS Pavement in Good Condition	Non-Interstate NHS System
4. % of Non-Interstate NHS Pavement in Poor Condition	Non-Interstate NHS
5. % of NHS Bridge Deck Area in Good Condition	NHS
6. % of NHS Bridge Deck Area in Poor Condition	NHS

Source: 23 CFR § 490

Safety

In 2016, FHWA issued Final Rules for the safety National Performance Management Measures, including the "Highway Safety Improvement Program" and the "Safety Performance Management Measures," effective as of April 14, 2016 [23 CFR §924, 23 CFR § 490]. State DOTs were required to set targets by August 31, 2017, as part of the State's annual submission of its Highway Safety Improvement Program (HSIP). MPOs are required to set targets by February 27, 2018. The National Performance Management Measures associated with this rule are identified in **Table 3: National Performance Management Measures – Safety.** MPOs do not report to FHWA or FTA, but must have a report available upon request from FHWA.

Table 3: National Performance Management Measures - Safety

National Performance Management Measure- Safety	Applies To
1. No. of Fatalities	All public roads
2. Fatality Rate per 100 million VMT	All public roads
3. No. of Serious Injuries	All public roads
4. Serious Injury Rate per 100 million VMT	All public roads
5. No. of Combined Non-Motorized Fatalities and Serious Injuries	All public roads
6. No. of Fatalities	All public roads

Source: 23 CFR §924, 23 CFR § 490

System Performance

In 2017, FHWA also issued a Final Rule for system performance/freight/Congestion Mitigation Air Quality (CMAQ), entitled "National Performance Management Measures; Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program,"[23 CFR § 490]. The Rule went into effect on May 20, 2017, except for certain components of the greenhouse gas (GHG) measure, which went into effect as of September 28, 2017. However, the FHWA has started procedures to repeal the GHG measure with the goal of issuing a Final Rule to repeal the measure in spring of 2018.[13] State DOTs are required to set targets by May 20, 2018, and MPOs are required to set targets by November 16, 2018. The National Performance Management Measures associated with this rule are identified in **Table 4: National Performance Management Measures – System Performance.** State DOTs and MPOs are required to establish 2-year and 4-year targets, and MPOs must establish targets by either supporting the statewide target, or defining a target unique to the MPO. MPOs are not required to provide a separate report to FHWA. Coordination will be

[13] *Transportation Performance Management.* Federal Highway Administration. https://www.fhwa.dot.gov/tpm/rule.cfm

required between State DOTs and MPOs if a State adjusts its 4-year target at the midpoint of the performance period [23 CFR § 490].

Table 4: National Performance Management Measures - System Performance

National Performance Management Measure- System Performance	Applies To
1. % Person-Miles Traveled on the Interstate that are Reliable	Interstate System
2. % Person-Miles Traveled on the Non-Interstate NHS that are Reliable	Non-Interstate NHS System
3. % Change in Tailpipe CO_2 (greenhouse gas) Emissions on the NHS Compared to the Calendar Year 2017 Level	NHS
4. Truck Travel Time Reliability (TTTR) Index	Interstate System
5. Annual Hours of Peak Hour Excessive Delay Per Capita	The NHS in urbanized areas with a population over 1 million for the first performance period and in urbanized areas with a population over 200,000 for the second and all other performance periods that are also in nonattainment or maintenance areas for ozone (O_3), carbon monoxide (CO), or particulate matter (PM_{10} and $PM_{2.5}$).
6. % Non-SOV Travel	The NHS in urbanized areas with a population over 1 million for the first performance period and in urbanized areas with a population over 200,000 for the second and all other performance periods that are also in nonattainment or maintenance areas for ozone (O_3), carbon monoxide (CO), or particulate matter (PM_{10} and $PM_{2.5}$).
7. Total Emissions Reduction	All projects financed with CMAQ funds in areas designated as nonattainment or maintenance for ozone (O_3), carbon monoxide (CO), or particulate matter (PM_{10} and $PM_{2.5}$)

Source: 23 CFR § 490

Transit Asset Management

In 2016, FTA issued a Final Rule on Transit Asset Management to evaluate "state of good repair of transit agency vehicles, facilities, and equipment."[14] The Final Rule, entitled "Transit Asset Management; National Transit Database," went into effect October 1, 2016 [49 CFR § 625, 630]. It is important for MPOs to consider the State Asset Management Plan and the Transit Asset Management Plan for their respective jurisdiction during the LRTP planning process.

State Statutory Requirements

MPOs must also comply with state requirements in the LRTP development process. According to Florida Statutes, the LRTP must include a review of capital investments and must "make the most efficient use of existing transportation facilities to relieve vehicular congestion, improve safety, and maximize the mobility of people and goods. Such efforts must include, but are not limited to, consideration of infrastructure and technological improvements necessary to accommodate advances in vehicle technology, such as autonomous technology and other developments," [339.175(7), F.S.]

The LRTP must also consider innovative financing techniques. "For the purpose of developing the long-range transportation plan, the MPO and the department shall cooperatively develop estimates of funds that will be available to support the plan implementation. Innovative financing techniques may be used to fund needed projects and programs. Such techniques may include the assessment of tolls, the use of value capture financing, or the use of value pricing," [339.175(7), F.S.]

In addition, the LRTP is required to identify enhancements to the transportation system. The LRTP must "indicate, as appropriate, proposed transportation enhancement activities, including, but not limited to, pedestrian and bicycle facilities, scenic easements, landscaping, historic preservation, mitigation of water pollution due to highway runoff, and control of outdoor advertising," [339.175(7), F.S.]

[14] *Final Rule on Statewide and Nonmetropolitan Transportation Planning and Metropolitan Transportation Planning*. U.S. Department of Transportation Federal Transit Administration. https://www.transit.dot.gov/regulations-and-guidance/transportation-planning/final-rule-statewide-and-nonmetropolitan

ADDRESSING COMPLIANCE OF THE 2045 LRTP UPDATE WITH FEDERAL, STATE, REGIONAL AND LOCAL REQUIREMENTS

03

AN EXAMINATION OF EMPHASIS AREAS

CHAPTER HIGHLIGHTS:

- **FEDERAL PLANNING EMPHASIS AREAS (PEAS)**
- **FLORIDA PLANNING EMPHASIS AREAS (PEAS)**
- **ADDITIONAL TOPICS OF EMPHASIS**
- **PLANNING EMPHASIS AREAS IN ACTION: A LONG RANGE TRANSPORTATION PLAN REVIEW**
    - PLAN 2040 REGIONAL TRANSPORTATION PLAN- A SHARED VISION FOR A SUSTAINABLE REGION
    - THE ATLANTA REGION'S PLAN
    - TRANSPORTATION 2040: TOWARD A SUSTAINABLE TRANSPORTATION SYSTEM
    - PLAN BAY AREA, REGIONAL TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITIES STRATEGY FOR THE SAN FRANCISCO BAY AREA, 2013-2040
    - 2040 FISCALLY CONSTRAINED REGIONAL TRANSPORTATION PLAN (RTP)
    - THE 2016-2040 REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY
    - MOVING FORWARD 2040: REGIONAL TRANSPORTATION PLAN

3. An Examination of Emphasis Areas

The Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the Florida Department of Transportation (FDOT) have identified several Planning Emphasis Areas (PEAs) that they encourage the State DOTs and the Metropolitan Planning Organizations (MPOs) to incorporate into their planning process and programs. A few of these PEAs, such as the requirement that an MPO use a performance-based planning process for the development of its Long Range Transportation Plan (LRTP), are further enforced by federal and state statutory requirements. In addition to these specific PEAs identified by federal and state government, the Miami-Dade TPO has also identified topics of emphasis to be considered in the LRTP.

Federal Planning Emphasis Areas (PEAs)

In 2014, FHWA and FTA identified three Federal PEAs from Secretary Foxx's strategic objectives for the Surface Transportation Program. These PEAs were to be incorporated into the unified planning work program (UPWP) of MPOs as well as statewide planning efforts nationwide. They are: MAP-21 Implementation, Regional Models of Cooperation, and Ladders of Opportunity. FHWA and FTA sent a joint letter to MPOs and State DOTs expressing their desire for the following PEAs to be given priority in their respective planning process. In 2015, a follow-up letter was sent out which re-emphasized the importance of the incorporation of the Federal PEAs into the Statewide and MPO planning process. The Federal PEAs are outlined below:

MAP-21 Implementation: Transition to Performance-based Planning and Programming- Under this Federal PEA, State DOTs and MPOs are encouraged to incorporate performance-based planning and programming into their planning process. The incorporation of Performance-Based Planning and Programming is also a Federal Requirement under the FAST Act.

Regional Models of Cooperation: Ensure a Regional Approach to Transportation Planning by Promoting Cooperation and Coordination across Transit Agency, MPO and State Boundaries - Under this Federal PEA, State DOTs and MPOs are encouraged to improve coordination with other agencies and partners to develop a "coordinated approach" to transportation planning and programming.

Ladders of Opportunity: Access to Essential Services- Under this Federal PEA, State DOTs and MPOs are encouraged to identify gaps in connectivity to essential services to improve accessibility, particularly for underserved populations.

Florida Planning Emphasis Areas (PEAs)

In 2015, the Florida Department of Transportation (FDOT) identified four PEAs for the state, with the intent of advancing multi-modal transportation planning. These PEAs are: freight planning, transit planning, complete streets, and bicycle and pedestrian planning. The state's MPOs are encouraged to incorporate these planning emphasis areas into their planning process:

Freight Planning – The movement of freight has been identified as a priority in Florida. It plays a key role in the growth of the economy, and in turn FDOT has developed a "Freight and Mobility Trade Plan" that MPOs are expected to comply with in their planning efforts.

Transit Planning – The need for transit is becoming increasingly apparent in Florida. FDOT has requested MPOs to consider planning for transit-oriented development, bus rapid transit, exclusive bus-only lanes, transit expansion, and other transit opportunities, where applicable.

Complete Streets – The incorporation of complete streets to make areas safer for all users is a priority in Florida. FDOT recently developed a Complete Streets Policy to be used throughout the state as a basis for the development and implementation of complete streets concepts based on contextual design. MPOs are expected to consider incorporation of these principles.

Bicycle and Pedestrian Planning – One of the highest priorities in Florida is improving the safety of all users. MPOs are encouraged to plan for integrated bicycle and pedestrian networks that are safe and interconnected. They may also consider the incorporation of a Pedestrian Safety Action Plan.

Additional Topics of Emphasis

In addition to the Federal and Florida PEAs identified by FHWA/FTA and FDOT, and along with all of the other topics that must be incorporated into the LRTP as part of federal and state requirements, the Miami-Dade TPO has also identified a series of topics as important components to incorporate into the LRTP. These items have been highlighted in the LRTP review section and include:

- Sustainability – Climate Change; Resiliency
- Air Quality – Innovative Air Quality Conformity Initiatives
- Livability – Transit Oriented Development; Complete Streets; Ladders of Opportunity
- Regionalism – Cooperation between agencies and partners; Activity Based Modeling/Visualization; Parking Management
- Financing – Innovating Financing Strategies; Public-Private Partnerships; Congestion Pricing
- Plan Development – Performance-Based Planning; Innovative Needs Assessment/Project prioritization; Innovative Public Involvement Techniques; Scenario Planning; Plan Evaluation and Implementation

Emphasis Areas in Action: A Long Range Transportation Plan Review

As part of this study, LRTPs from selected MPOs across the country were reviewed for the identification of noteworthy practices related to the incorporation of the Federal and State requirements, the Federal and Florida PEAs, and the Additional Topics of Emphasis identified at the local level. After an initial review, seven LRTPs were selected and approved by the Miami-Dade TPO for inclusion in this report. Some MPOs have been identified because of national recognition, and others because of an innovative process. While the organizational structure of the various MPOs examined may differ from that of the Miami-Dade TPO, each region has a unique perspective and their own set of priorities which can serve as a valuable resource to the TPO. A review of the LRTPs included an examination of the Federal Planning Factors, Federal Planning Emphasis Areas, State Planning Emphasis Areas, and additional Local Topics of Emphasis that the TPO identified as important to their regional planning process. Topics reviewed were consolidated to like-categories to reduce redundancy. For example, the resiliency Federal Planning Factor is addressed under a separate "sustainability" category and therefore is not listed under the Federal Planning Factor section in the table. The criteria are further outlined in the following sections. MPOs selected for review are identified in **Figure 2: Map of MPOs Reviewed** and **Table 5: Table of MPOs Reviewed** and are explored further in this section.

Figure 2: Map of MPOs Reviewed

Table 5: Table of MPOs Reviewed

MPO	2010 Population	Area (sq mi)	Plan	Adopted	Plan Highlights
New York Metropolitan Transportation Council (NYMTC), New York, NY	12,367,508	2,440	Plan 2040 Regional Transportation Plan: A Shared Vision for a Sustainable Region	Sept 4, 2013	• Sustainability focus • Livability focus • Regionalism and coordination efforts • Public involvement process • Improvement of accessibility for people and freight • Innovative technologies that have been incorporated throughout the region
Atlanta Regional Commission (ARC), Atlanta, GA	4,818,052	4,550	The Atlanta Region's Plan Transportation Element	May 2017	• Contributions to enhancing travel and tourism • Sustainability focus • Livability focus • Regionalism and coordination efforts • Financing strategies • Project evaluation process • Scenario planning • Innovative technologies that have been incorporated throughout the region
Puget Sound Regional Council (PSRC), Seattle, WA	3,690,866	6,384	Transportation 2040: Toward a Sustainable Transportation System Plan and Update Report	Final LRTP: May 24, 2010 Update Report: May 29, 2014	• Contributions to enhancing the integration and connectivity of the transportation system • Contributions to protecting and enhancing the environment, promoting energy conservation, improving quality of life, and promoting consistency between transportation improvements • Project evaluation process

MPO	2010 Population	Area (sq mi)	Plan	Adopted	Plan Highlights
Metropolitan Transportation Commission (MTC), San Francisco, CA	7,150,828	7,485	Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040	Jul 18, 2013	• Contributions to protecting and enhancing the environment, promoting energy conservation and improving quality of life, and promoting consistency between transportation improvements • Sustainability focus • Livability focus • Performance-based planning framework • Project evaluation process • Incorporation of scenario planning
Denver Regional Council of Governments (DRCOG), Denver, CO	2,827,082	3,605	2040 Fiscally Constrained Regional Transportation Plan (RTP)	Feb 18, 2015	• Federal Planning Factors which have been addressed and incorporated into the plan • The plan's project evaluation process.
Southern California Association of Governments (SCAG), Los Angeles, CA	18,051,203	38,649	The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life	Apr 2016	• Livability focus • Financial strategies • Inclusion of public-private partnerships • Consideration of autonomous vehicles
Pikes Peak Area Council of Governments (PPACG), Colorado Springs, CO	650,673	4,918	Moving Forward 2040: Regional Transportation Plan	Nov 2015	• Innovative financial strategies identified

Source: Data taken from selected MPOs and LRTPs, and the USDOT MPO Database

Plan 2040 Regional Transportation Plan- A Shared Vision for a Sustainable Region

New York Metropolitan Transportation Council (NYMTC), New York, NY

Counties Served: 10
MPO Area: 2,726 sq. mi.
LRTP Adopted: September 4, 2013
MPO 2010 Population: 12,367,508

About the MPO

The New York Metropolitan Transportation Council (NYMTC) was federally designated in 1982 as the Metropolitan Planning Organization (MPO) for the five boroughs of New York City, and the five suburban counties in the lower Hudson Valley and Long Island, which includes Nassau, Suffolk, Putnam, Rockland, and Westchester counties. It provides a forum for collaboration on the identification and implementation of transportation related planning, including various types of transportation studies, such as forecasting future transportation demand, and decision making related to the allocation and use of federal funds. The NYMTC organizational structure includes four committees: three Transportation Coordination Committees and the Program Finance and Administration Committee. The NYMTC region consists of 2,726 square miles and had an estimated population of 12.4 million in 2010.[15] The region is projected to grow to 14.3 million people by 2040, and is one of the largest regions in the country.

Plan 2040 Regional Transportation Plan - A Shared Vision for a Sustainable Region

The *Plan 2040 Regional Transportation Plan: A Shared Vision for a Sustainable Region* was developed through cooperation between communities and member agencies across the MPO planning area. The 2040 update to the *2035 Regional Transportation Plan: A Shared Vision for a Shared Future* was initiated in 2012, with the final LRTP being adopted on September 4, 2013. The 2040 update highlights a shared vision that has been identified through extensive stakeholder involvement and public participation. The shared vision includes the identification of goal areas, land use designations, and key regional transportation investments to highlight linkages between land use, transportation, and economic development. Under each goal, near and long-term actions are identified to promote the LRTP's vision. The goals were originally identified in previous LRTPs and have been carried forward in successive updates that have been slightly modified over time to reflect regional priorities. The Shared Land Use Designations

[15] *New York Metropolitan Transportation Council (NYMTC).* Metropolitan Planning Organization (MPO) Database. United States Department of Transportation. https://www.planning.dot.gov/mpo.asp

identified in the LRTP link locations identified as either sustainable development centers or corridors worthy of transportation investments and development throughout the region. The final component of the Shared Vision is the identification of transportation system investments, which are strategic projects that have been identified to further the LRTP's goals and address the region's needs. Projects are divided into three categories: those that preserve the system, those that enhance the system, and those that grow the system.

Source: Plan 2040 Regional Transportation Plan: A Shared Vision for a Sustainable Region, NYMTC, pg. 1-6

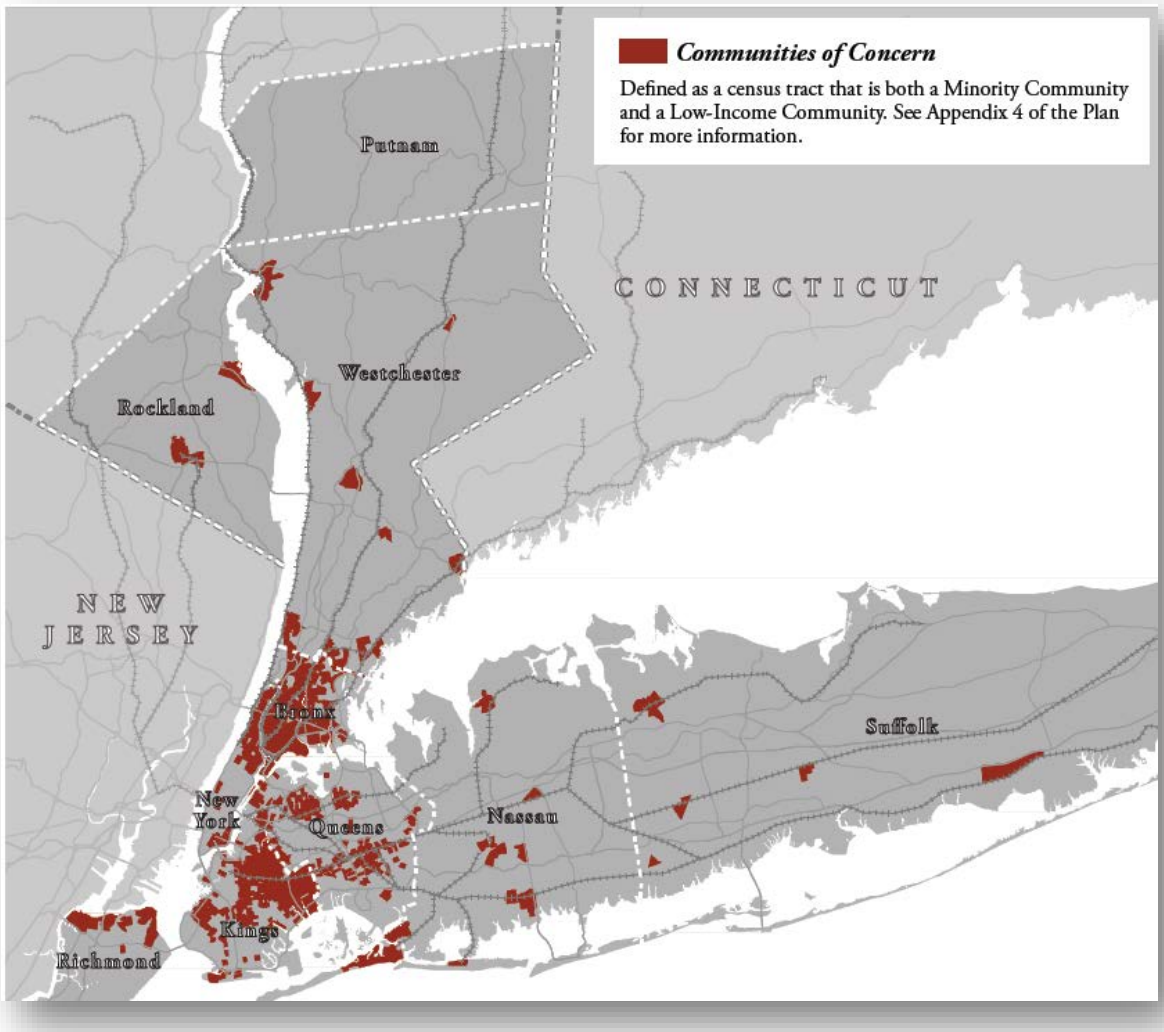
Key Highlights of this LRTP:

- Sustainability Focus - The New York region has identified resiliency and climate adaptation as a primary focus area in *Plan 2040 Regional Transportation Plan: A Shared Vision for a Sustainable Region*. In the aftermath of Hurricane Sandy, the city formed the *Special Initiative for Rebuilding and Resiliency,* which was tasked with developing a plan for the protection and hardening of the city's buildings and infrastructure to mitigate against the future impacts of climate change. In addition, the plan has identified two main approaches to mitigating the effects of climate change-using cleaner energy sources to for cars and the development of car share programs.

- Regionalism- Coordination - To promote regional collaboration within the NYMTC planning area, three subregions were created called Transportation Coordinating Committees (TCCs). These committees are: New York City, Mid-Hudson South, and Nassau-Suffolk. These areas provide a forum for planning at a more localized level within the large New York metropolitan region.

- Public Involvement/Ladders of Opportunity - During the development of *2035 Regional Transportation Plan: A Shared Vision for a Shared Future*, a web-based platform called MindMixer was used to serve as a platform for public involvement during the planning process. This platform allows the public to view and comment on the LRTP, as well as submit ideas or suggestions related to the process. This innovative process was used during the 2040 update as well, and has been highlighted in this report as a best practice. In addition to using innovative platforms to engage the public, *Plan 2040 Regional Transportation Plan: A Shared Vision for a Sustainable Region* also includes an Environmental Justice Assessment to ensure that the "benefits and burdens of strategic regional transportation investments do not disproportionately affect minority and low-income populations." Project-level assessments have been included in the LRTP. As part of the assessment, Communities of Concern were identified

by census tract through an examination of the percentage of minority populations and the percentage of persons below the poverty level. For each identified Community of Concern, several criteria were used in an environmental justice assessment: travel characteristics, travel time to work, and linguistic isolation.



Source: Plan 2040 Regional Transportation Plan: A Shared Vision for a Sustainable Region, NYMTC, pg. 7-6

- Increasing Accessibility and Mobility for People and Freight - The movement of people and freight is a priority in New York. The region continues to invest in public transportation to ease congestion. In addition, the NYMTC planning area is one of the largest freight hubs in the northeast United States. The NYCDOT has developed two different programs to aid in alleviating congestion caused by freight movement, known as *Delivery Windows* and *NYC deliverEASE*. The *Delivery Windows* program provides a "delivery window" of time during peak hours in the morning for trucks to deliver freight to authorized unloading zones. During the rest of the day, the unloading zones are available to other vehicles for parking. In an attempt to incorporate complete streets concepts into the planning process to reduce congestion, "delivery windows" are often incorporated in areas with bike lanes, bus rapid transit, and other parking programs. *NYC deliverEASE* is a USDOT funded pilot program aimed at promoting delivery of freight during off-peak hours. This reduces the number of freight trucks on the road during the day, and allows for better access to businesses in the center of the city during peak hours.

- Innovative Technologies - To promote the use of transit and rideshare services, several programs have been launched in the NYMTC planning area. *511NY Rideshare* is a region wide program that provides information to travelers such as transit routes, ride-matching services, walking and biking routes and walk/bike to work programs, first-mile/last-mile shuttle service information, vanpools, transit trip planners, guaranteed ride home programs and other educational material related to transit demand management. Many employers in the NYMTC planning area offer incentives for employees to utilize transit services to get to work, such as parking cash-out programs, which provide employees with a cash stipend instead of a free or subsidized parking space if they choose to use other modes of transportation to and from the workplace.

As can be seen above, the NYMTC takes a comprehensive approach to the development of their LRTP, and uses a Shared Vision to guide the planning process. The LRTP also incorporates various techniques, such as focusing on sustainability, regionalism, an innovative public participation, and extensive environmental assessments, that make it exemplary. In addition, their LRTP highlights various freight initiatives and innovative technologies in the NYMTC planning area that are progressive and could potentially be incorporated in Miami-Dade.

The Atlanta Region's Plan Transportation Element

Atlanta Regional Commission (ARC), Atlanta, GA

Counties Served:
10 as the Regional Commission (RC)
20 as the Metropolitan Planning Organization (MPO)
MPO Area: 4,550 sq. mi.
LRTP Adopted: May 2017
MPO 2010 Population: 4,818,052

About the MPO

The Atlanta Regional Commission (ARC) was federally designated in 1971 as the Metropolitan Planning Organization (MPO) for the Atlanta Region, and serves multiple jurisdictions based on its planning role. The ARC serves as the Regional Commission to 10 counties: Cherokee, Clayton, Cobb, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry and Rockdale, and the city of Atlanta. As the Regional Commission, the ARC assists local jurisdictions in the development and implementation of comprehensive plans. The ARC also serves as the federally designated Metropolitan Planning Organization (MPO) for an additional 10 counties in the Atlanta Region: Forsyth, Coweta, Paulding, and parts of Barrow, Walton, Newton, Spalding, Carroll, Dawson, and Pike. The MPO's function is to develop a coordinated transportation plan that serves the jurisdictions within the 20-county planning area to create a connected, intermodal transportation system. The ARC is also responsible for:

- Air Quality Planning - 23 counties,
- Water Resources Planning - 15 counties,
- Aging Community Planning - 7 counties,
- Workforce Planning - 10 counties, and
- Security and Recovery Planning - 5 counties

The ARC provides comprehensive planning services to the region it serves. Because of the size and complexity of its planning areas, it must coordinate extensively with its member governments. The ARC is governed by a 39-member board made up of county commissioners, mayors, council members, citizens, and a representative from the Georgia Department of Community Affairs. The ARC region consists of 4,550 square miles and had a population of 4.8 million in 2010.[16] The region expects its population to grow to over 8 million people by 2040.

[16] *Atlanta Regional Commission (ARC).* Metropolitan Planning Organization (MPO) Database. United States Department of Transportation. https://www.planning.dot.gov/mpo.asp

The Atlanta Region's Plan Transportation Element

The ARC's mission is to "Win the Future" through the development of a comprehensive plan that will provide an overarching vision for the region that consists of creating healthy livable communities, a competitive economy, and world class infrastructure. The *Atlanta Region's Plan* was adopted in May of 2017, and serves as the region's comprehensive plan. It aims to incorporate all of the ARC's broad planning responsibilities: transportation, community development, water resources, aging & health services, and workforce development. The *Atlanta Region's Plan* includes six goals to achieve its long-term vision: 1) Building the Region as a globally recognized hub of innovation and prosperity; 2) Developing a highly educated and skilled workforce able to meet the needs of 21st century employers; 3) Ensuring a comprehensive transportation network incorporating regional transit and 21st century technology; 4) Secured, long-term water supply; 5) Developing additional walkable, vibrant centers that support people of all ages and abilities; and 6) Promoting health, arts and other aspects of a high quality of life. The vision and six goals form the Policy Framework of the Plan. *The Atlanta Region's Plan Transportation Element* is one component of the *Atlanta Region's Plan*. This component serves as the region's LRTP and is an update to the *Plan 2040 Regional Transportation Plan* adopted in 2014, and builds on the data and analysis included within it. The *Atlanta Region's Plan Transportation Element* focuses on goal number three. It serves a key role in furthering the comprehensive plan's vision, and where possible, projects and programs are linked back to the vision to show how the role of each project in furthering each component of the vision. Goal number three is supported by seven objectives and 23 policies in the *Atlanta Region's Plan Transportation Element*.

Source: The Atlanta Region's Plan Transportation Element, ARC, pg. 46

Key Highlights of this LRTP:

- Contributions to Enhancing Travel and Tourism - It is a federal requirement for LRTP's to consider the incorporation of the Federal Planning Factors during the planning process. The *Atlanta Region's Plan Transportation Element* was updated in 2016 and included the two new Federal Planning Factors identified under the FAST Act, in addition to the 8 that were identified under previous reauthorizations

of the Surface Transportation Program. The two new Federal Planning Factors are: "Enhance Travel and Tourism," and "improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation." The LRTP mentions tourism as a contributor to the economy of the region. It also addresses the resiliency Federal Planning Factor, which will be explored further below. The LRTP includes strategies to reduce congestion, which provide various benefits to the economy, including the tourism industry. Strategies include investment in Transportation System Management and Operations (TSM&O) technologies such as Georgia's NaviGAtor Advanced Traffic Management System (ATMS), which consists of additional freeway cameras, speed detection, and on-ramp metering; and HERO (Highway Emergency Response Operators), which aids in the response and clearance of traffic incidents, and other emergency situations.

- Sustainability Focus - The *Atlanta Region's Plan Transportation Element* includes an "Eco-Logical Approach" that establishes a rigorous transportation system resilience planning work program. The "Eco-Logical Approach" consists of a (1) "Regional Ecosystem Framework Development and Analysis, (2) Streamlining NEPA (National Environmental Policy Act) and Accelerating Project Delivery," (3) "Updating the Metropolitan North Georgia Water District Plan and Corresponding Green Infrastructure Strategies, and (4) Development of a Transportation System Preparedness and Resilience Plan." The purpose is to assess the level of resiliency of the transportation network and travel behavior in response to extreme weather events and climate change impacts, which will aid in prioritizing critical infrastructure.

Source: The Atlanta Region's Plan Transportation Element, ARC, pg. 58

- Livability Focus - Addressing Ladders of Opportunity/Access to Essential Services has been identified as a Federal Planning Emphasis Area by USDOT. MPOs are requested to incorporate Ladders of Opportunity into their planning process. In Atlanta, promoting an accessible and equitable transportation system is an objective of the LRTP. The ARC has identified Equitable Target Areas, which are areas that have been identified as environmental justice communities. The MPO created an "Equitable Target Area (ETA) Index," which is designed to assess the impact of plan investments on these areas. Factors include: percent of population

considered to be in Poverty, percent of population that are African American, percent of population that are Asian, percent of population that are Hispanic, and percent of population that are not White.

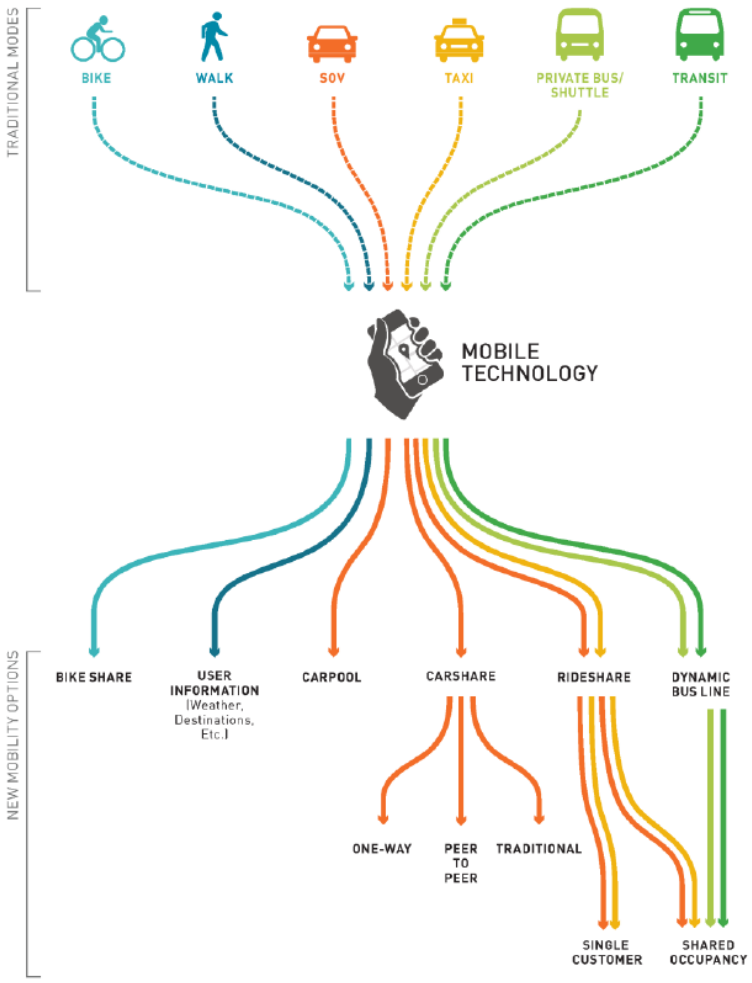
- Regionalism and Cooperation - Models of Regional Cooperation has also been identified as a Federal Planning Emphasis Areas by USDOT. MPOs are requested to incorporate Models of Regional Cooperation into their planning process. The ARC has been identified as a case study example by FHWA for its efforts. The primary purpose of the *Atlanta Region's Plan Transportation Element* is to coordinate transportation planning efforts to reflect regional priorities and develop a streamlined, efficient transportation network. The ARC uses a Comprehensive Transportation Plan (CTP) program approach to ensure that the recommendations presented in the LRTP address local issues. To ensure that communities are working together in coordinating transportation planning efforts, the CTP program encourages communities to develop joint LRTPs by providing financial incentives. Participation in the program is not mandatory, however, many of the local jurisdictions throughout the ARC planning area have elected to participate and have found it to be an effective way of identifying needs and priorities, which are then reflected in the ARC's LRTP and Transportation Improvement Program (TIP).

- Financing Strategies - To fund the MARTA rail line, the Atlanta region enacted a sales tax across multiple jurisdictions that has generated $14.6 billion in 2016 to be used for the system. Additional revenues have been generated by "fare box receipts" and other sources of funding, accruing to over $3.9 million. In addition, the Georgia State Legislature lifted the "50/50" requirement, which originally required 50 percent of funding to go toward capital costs and 50 percent of funding to go toward operating costs. Lifting this requirement gives the ARC greater flexibility in fund allocation.

- Project Evaluation - To assess and prioritize which projects should be included, the *Atlanta Region's Plan Transportation Element* used a three-step multi-dimensional project evaluation process. The first step was the use of a Benefit/Cost (B/C) ratio. The ARC's travel demand model was used to evaluate each project's monetized benefit to the system, which was then divided by the project's cost. Project evaluation criteria were also identified and used for project evaluation and scoring as the second step in the process. Current regional needs and forecasted future project performance were identified as two separate components of transportation projects. The current need of a project helps depict the current state of the system and an evaluation using criteria such as safety, congestion, reliability, social equity, air quality, and freight helps to depict the project's future performance related to these items. Finally, a visualization tool was developed by the ARC and posted online for the public to be able to access the evaluation of each project; allowing for greater public involvement in the process.

- Scenario Planning/ Innovative Technologies - Scenario planning is often used as a way to depict how, given certain situations, a region is likely to grow and develop. An examination of different scenarios allows for a comparison of outcomes. The *Atlanta Region's Plan Transportation Element* includes three scenarios. The first one, "technological advancements," depicts how the region will look given certain technological advancements such as in communication, and how it would impact how people move about the region. The second, "autonomous vehicles," depicts how the region will be impacted by investments in new vehicle technology such as autonomous vehicles and connected vehicles. Finally, the third, "transit connected regional centers," depicts how the region would be impacted by locating growth around transit networks to prioritize transit expansion.

The ARC is planning for technological advancements and in their LRTP. The graphic shows the impact of mobile technology on the transportation system.



Source: The Atlanta Region's Plan Transportation Element, ARC, pg. 198

The ARC is tasked with many planning responsibilities, and as such, has developed a plan that addresses these tasks in a comprehensive manner. Through the incorporation of the two new Federal Planning Factors, an extensive sustainability and livability focus, unique regional coordination techniques, creative financing strategies and project evaluation process, and the use of scenario planning and incorporation of innovative technologies, this LRTP is truly a comprehensive depiction of the state of the transportation system in the region.

Transportation 2040: Toward a Sustainable Transportation System Plan and Update Report

Puget Sound Regional Council (PSRC), Seattle, WA

Counties Served: 4
MPO Area: 6,384 sq. mi.
LRTP Adopted: May 24, 2010
Update Report: May 29, 2014
MPO 2010 Population: 3,690,866

About the MPO

The Puget Sound Regional Council (PSRC) was federally designated in 1991 as the Metropolitan Planning Organization (MPO) for the Seattle, Washington four-county region of King, Kitsap, Pierce, and Snohomish counties. The PSRC is responsible for promoting the development of an interconnected, regional transportation network. This is done through: the region's growth strategy- VISION 2040, the development of the LRTP, and the "Prosperity Partnership," which oversees the development of the region's economic strategy. The MPO provides a forum for collaboration on regional planning activities. The PSRC's organizational structure consists of a General Assembly made up of elected officials from all four counties as well as the cities and towns in the planning area and a 32-member Executive Board which makes decisions on behalf of the General Assembly. It also includes an Economic Development Board, Growth Management Policy Board, Operations Committee, a Transportation Policy Board and 17 additional committees. The PSRC region is 6,384 square miles and had an estimated population of 3.7 million in 2010.[17] The region's population is projected to grow to 5.2 million people by 2040.

Transportation 2040: Toward a Sustainable Transportation System Plan and Update Report

The PSRC's LRTP furthers VISION 2040, the area's regional growth strategy. *Transportation 2040: Toward a Sustainable Transportation System* was adopted on May 24, 2010, and serves as the region's LRTP. It includes three strategies for addressing VISION 2040: (1) improving mobility, (2) protecting and enhancing the environment, and (3) identifying sustainable funding. To address mobility, projects included in the LRTP promotes a strategic approach to growth along transit corridors to ease congestion. To protect the environment, projects have been evaluated to determine potential environmental impacts to the region.

[17] *Puget Sound Regional Council (PSRC).* Metropolitan Planning Organization (MPO) Database. United States Department of Transportation. https://www.planning.dot.gov/mpo.asp

In the identification of sustainable funding sources, the LRTP acknowledges the potential change in viability of the fuel tax to be used as a source of revenue for transportation projects, due to changing technologies and inflation. The LRTP has established a framework for investments; with identifying projects that preserve and maintain the system prioritized first, followed by projects that promote safety and security, then efficiency, then those that strategically expand capacity.

On May 29, 2014, the region adopted an update report to *Transportation 2040: Toward a Sustainable Transportation System*, which included updates to the data and technical analysis included in the 2010 plan. The T*ransportation 2040: Toward a Sustainable Transportation System Update Report* includes the following changes: the addition of a new Active Transportation Plan, updates to the Financial Strategy, Coordinated Transit-Human Services Plan, and Regional Transportation Demand Management Action Plan.

Transportation 2040 Plan Framework

Source: Transportation 2040: Toward a Sustainable Transportation System, PSRC, pg. 18

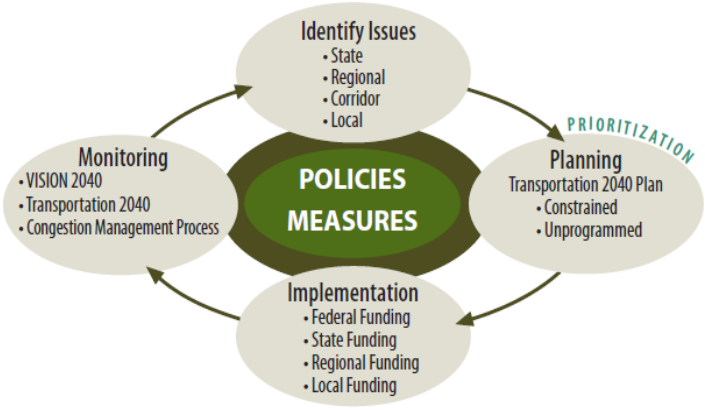
Key Highlights of this LRTP:

- Contributions to Enhancing Integration and Connectivity - Improving connectivity through the creation of livable communities has been identified as a priority in the PSRC region. *Transportation 2040: Toward a Sustainable Transportation System* includes a strategic framework to improving mobility and relieving congestion that consists of the creation of land use patterns that promote ease of access and mixed use development, managing system demand by making multimodal transportation more convenient to use, making changes to the Transportation System Management and Operations (TSM&O) system to improve efficiency, and strategically expanding capacity after all efforts have been made to expand existing facility capacity. In addition, the region has formed a "Growing Transit Communities Partnership," which is featured in the Update Report. It consists of members from the local business community, public officials, transit agencies, and non-profit organizations. The group was tasked with recommending strategies to "encourage high quality, equitable development around high capacity transit." The group conducted a gap analysis to determine accessibility to opportunities via transit service. Once recommendations were formulated, the "Growing Transit Communities Strategy" recommendations into a toolkit, with "24 recommended strategies, eight implementation

approaches, and corridor specific priorities that will guide an evolving approach to transit communities."

- Contributions to the Environment, Energy Conservation, Quality of Life, and Consistency - The PSRC region has taken a unique approach to integrating environmental protection and quality of life into the planning process for *Transportation 2040: Toward a Sustainable Transportation System* and the T*ransportation 2040: Toward a Sustainable Transportation System Update Report*, while ensuring that all projects included in the LRTP are consistent in their attempt to improve the transportation network within the region. Unique to *Transportation 2040: Toward a Sustainable Transportation System*, the region developed an Environmental Impact Statement (EIS) specifically for the LRTP. It involved the work of multiple stakeholders. Through an integrated effort, the development of the EIS was managed by the Transportation Policy Board and the Growth Management Policy Board. It identified regional policy objectives to promote efforts related to "improved air quality, reduced greenhouse gases, improved water quality, public health and mobility, and support for the Vision 2040 Regional Growth Strategy." In addition, potential measures that could mitigate future environmental impacts associated with projects identified in the LRTP are also included.

- Project Evaluation - The PSRC created multi-step process for evaluating projects in the LRTP. First, projects were grouped into four categories based on their purpose: state of good repair, regional system expansion, programmatic investments, and local projects. Local projects are separated from the project list because they had been identified by local jurisdictions and therefore were to be included automatically. The remaining projects were evaluated based on criteria that used nine measures: air quality, freight, jobs, multimodal, Puget Sound land & water, safety and system security, social equity & access to opportunity, support for centers, and travel. After ranking projects, scorecards were created with additional information related to project development, cost, and time of completion.



Source: Transportation 2040: Toward a Sustainable Transportation System, PSRC, pg. 91

The PSRC continues to strive for an increasingly interconnected regional transit system and a better quality of life through environmental protection and through the creation of an LRTP that generates projects that reflect regional priorities.

Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040

Metropolitan Transportation Commission (MTC), San Francisco, CA

Counties Served: 9
MPO Area Covered: 7,485 sq. mi.
Plan Adopted: July 18, 2013
MPO 2010 Population: 7,150,828

About the MPO

The Metropolitan Transportation Commission (MTC) was federally designated in 1970 as the Metropolitan Planning Organization (MPO) for the San Francisco, CA region of San Francisco, Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, and San Mateo counties. The MTC is responsible for ensuring the region plans for its transportation needs through a connected and integrated transportation system. The MTC organizational structure consists of three separate agencies: the MTC, the Bay Area Toll Authority (BATA), and the Service Authority for Freeways & Expressways (SAFE). The MTC consists of seven standing committees and seventeen interagency committees that they share with their transportation planning partners. The management staff of the MTC consists of an executive director, three deputy directors and 13 senior staff members. The MTC also has a Policy Advisory Council that consists of citizens of the region who provide input on the decision-making process for the MPO. The MTC region encompasses 7,485 square miles and had an estimated population of 7.2 million in 2010.[18] The region projects its population will to grow to 9.3 million people by 2040

Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040

The MTC's LRTP provides a vision for a sustainable region and an integrated transportation system by combining the LRTP with the region's sustainable communities' strategy. *Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040* was adopted on July 18, 2013 and serves as the region's LRTP. The LRTP was developed in coordination with the Association of Bay Area Governments (ABAG), which is an advisory organization consisting of various local jurisdictions in the San Francisco Bay Area. The LRTP presents various planning and land use scenarios that address regional priorities and needs that have been identified by local jurisdictions within their comprehensive plans. The LRTP identifies three strategies for moving toward a more sustainable region:

[18] *Metropolitan Transportation Commission (MTC).* Metropolitan Planning Organization (MPO) Database. United States Department of Transportation. https://www.planning.dot.gov/mpo.asp

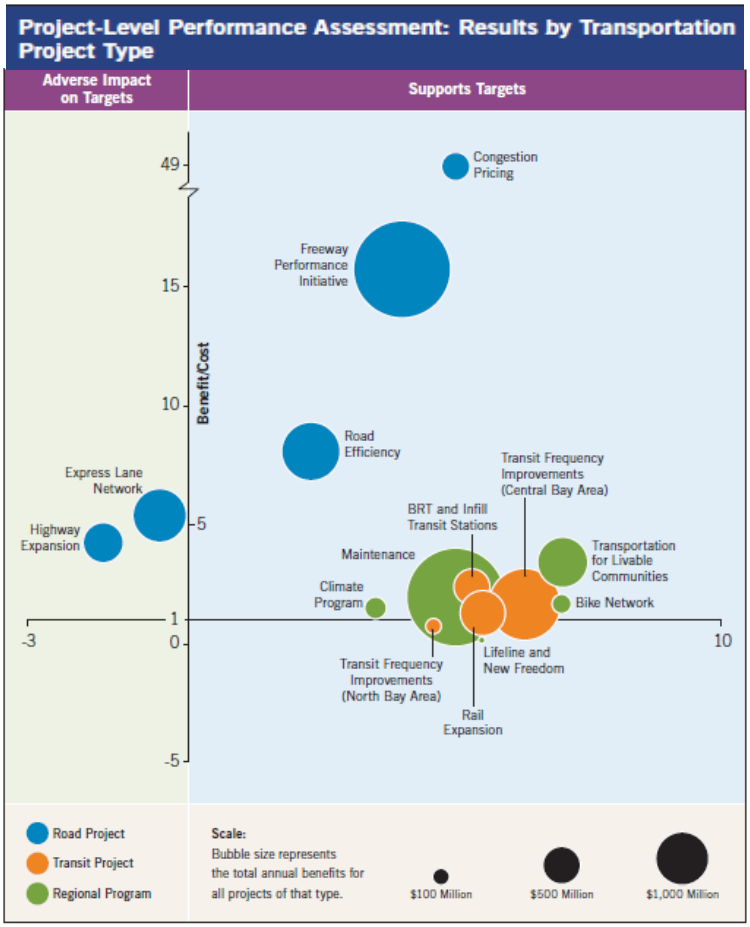
"by helping to harmonize local decision-making and regional goals, by better integrating transportation investment and land use planning, and by more closely aligning our policies with our vision." The LRTP also includes 15 performance measures and targets (10 targets and 5 sub-targets) to evaluate the effectiveness of the Plan in addressing the MTC's goals and objectives.

Key Highlights of this LRTP:

- Contributions to protecting and enhancing the environment, promoting energy conservation, improving quality of life, and promoting consistency between transportation improvements- The MTC has incorporated an innovative land development strategy into *Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040*. To promote environmental quality and preservation of sensitive areas, the MTC has strategically identified 200 existing neighborhoods that have been evaluated by local governments and selected as priority areas to support future growth. Known as Priority Development Areas (PDAs), these neighborhoods may be located along existing transit networks and can support mixed use and walkable, bikeable communities. The purpose of PDAs is to concentrate development in certain regions that would allow for the area to maximize the use of its currently available infrastructure while at the same time reducing sprawl and the need to extend services to other areas. In addition to identifying areas of future growth, the region has also identified areas of future conservation. Priority Conservation Areas (PCAs) are areas that have been identified as developable land but the region recognizes a need to preserve them from development because of their value as agricultural land or open space. Combined, PDAs and PCAs will help the region to grow strategically while preserving areas that are most environmentally sensitive or significant to agricultural production in the area.

- Sustainability focus- The state of California passed SB 375 in 2008 that stated that every metropolitan area must develop a sustainable communities strategy. The MTC addressed the requirement by combining its LRTP with a sustainable communities strategy for the region. As such, *Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040* is framed around the three pillars of sustainability: environment, equity, and the economy. These "3E's" are reflected in the LRTP's targets and performance measures. The region has also made various investments in programs to reduce greenhouse gas (GHG) emissions, such as car sharing, electric vehicle charging network, clean vehicles fee rebate program, and incentives towards buying electric cars. The region also offers the One Bay Area Grant Program (OBAG) which is designed to provide funding as an incentive to encourage development of Priority Development Areas through zoning regulations. The MTC uses the following factors to determine the allocation of funding for the OBAG: "population, past housing production and future housing commitments, and efforts to produce low-income housing."

- Livability focus - MPOs have been asked to incorporate the Federal Planning Emphasis Areas identified by FHWA and FTA into their planning process. Regarding Ladders of Opportunity, *Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040* was developed with an extensive focus on equity as one of the three pillars of sustainability. To ensure that equity was considered throughout the planning process, the Plan includes "communities of concern," which were identified as areas with "concentrations of socioeconomically disadvantaged or vulnerable populations." This definition was developed and refined with extensive stakeholder input. They identified key regional equity issues and used those as a guide to identify the region's most disadvantaged areas. The region then adopted five "Equity Analysis Measures" in evaluating the LRTP's implementation: "Housing and Transportation Affordability, Potential for Displacement, Healthy Communities, Access to Jobs, and Equitable Mobility." Through identification of specific equity measures, the region was able to identify social impacts and environmental justice concerns that are adversely affecting the population.



Source: Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040, MTC, pg. 115

- Performance-based planning framework - Regarding the MAP-21 Implementation: A Transition to Performance-Based Planning and Programming Federal Planning Emphasis Area, *Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040* takes an innovative approach to the development of a performance-based planning framework. The LRTP includes 10 performance targets that were identified through the involvement of stakeholders and the public. Of the 10 targets, two of them are mandatory and eight are voluntary. The two mandatory performance targets are under the goal areas of: "Climate Protection" and "Adequate Housing." The eight voluntary targets are under the goal

areas of: "Healthy and Safe Communities, Open Space and Agricultural Preservation, Equitable Access, Economic Vitality, Transportation System Effectiveness." After identifying the targets, the LRTP includes an assessment of how well it performed, using the targets. Several of the voluntary targets are aspirational, and *Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040* does not meet them. Following this evaluation, the region identified scenarios that were used to forecast regional growth and development by 2040 based on land use and investments. Using the current assessment as a base, the LRTP used the various scenarios as a way to evaluate how the region will perform in addressing its performance targets in 2040. In addition to an assessment of the LRTP's overall performance, the MTC also evaluated the performance of individual projects. This allowed for a better depiction of each project's potential impact on the overall performance of the LRTP.

- Project evaluation process- *Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040* uses a two-step project evaluation process. It involved a benefit/cost ratio which quantifies each project's benefits in relation to costs, and then evaluated each project performance to determine its effectiveness in achieving each the performance measures target identified in the LRTP. Any agency with a project that scored low on the performance assessment or had a benefit/cost ratio of less than one had to submit a case write-up illustrating the effectiveness of the project to be included in the LRTP. However, it is important to note that the LRTP includes low-performing projects, as there are certain projects that have a value that is not represented by the evaluation criteria. These types of projects, such as equity projects, for example, are included in the Plan for their special role in addressing social impacts on disadvantaged populations.

- Incorporation of scenario planning- The LRTP uses scenario planning to explore potential changes in land use and investments by the year 2040. A set of visioning scenarios were identified, in addition to a set of alternative visioning scenarios. After an evaluation of the LRTP was completed, the various scenarios identified in the LRTP were evaluated in order to select a preferred scenario. The preferred scenario represents regional priorities, and was developed with extensive public input.

The MTC includes a unique land development strategy and an extensive performance-based planning framework that promotes strategic development in areas that have existing infrastructure to support future growth. Through its sustainability framework, valuable farmland and open space can be preserved.

2040 Fiscally Constrained Regional Transportation Plan (RTP)

Denver Regional Council of Governments (DRCOG), Denver, CO

Counties Served: 9
MPO Area Covered: 3,605 sq. mi.
LRTP Adopted: February 18, 2015
MPO 2010 Population: 2,827,082

About the MPO

The Denver Regional Council of Governments (DRCOG) was federally designated in 1977 as the Metropolitan Planning Organization (MPO) for the greater Denver, CO region serving Adams, Arapahoe, Boulder, Clear Creek, Douglas, Jefferson, and Gilpin counties, and the City and County of Broomfield and the City and County of Denver. The region's vision is to develop connected and vibrant communities that contain housing to serve all residents, transportation services, and employment centers, in "world-class natural and built environments." The DRCOG organizational structure consists of a 60-member board of 57 voting members and 3 non-voting members, seven senior staff members, and six committees that provide input on the decision-making process of the MPO. The DRCOG region consists of 3,605 square miles and had an estimated population of 2.8 million in 2010.[19] The region projects its population will to grow to over 4 million people by 2040.

2040 Fiscally Constrained Regional Transportation Plan (RTP)

The DRCOG seeks to provide the region with an interconnected transportation system through a strategic approach to regional growth, a vision that the region hopes to achieve through the implementation of their LRTP. The *2040 Fiscally Constrained Regional Transportation Plan* was adopted on February 18, 2015 and serves as the region's LRTP. The LRTP is consistent with the region's *Metro Vision*, which is the growth and development strategy for the DRCOG region. The *Metro Vision* was adopted in January of 2017, and outlines a strategy for the future of the region's transportation system, strategic growth, and environmental stewardship. The vision is supported by 14 policies that reflect elements of mobility, land use, and development.

In addition, the DRCOG developed a *Metro Vision Regional Transportation Plan* (MVRTP) to execute the transportation component of *Metro Vision*. The plan includes unconstrained and constrained

[19] *Denver Regional Council of Governments (DRCOG).* Metropolitan Planning Organization (MPO) Database. United States Department of Transportation. https://www.planning.dot.gov/mpo.asp

transportation projects that address the region's needs. The DRCOG incorporated the goals and policy recommendations of the *Metro Vision* and the 2040 MVRTP into the 2040 LRTP.

Key Highlights of this LRTP:

- Federal Planning Factors which have been addressed and incorporated into the plan- It is a requirement for MPOs to incorporate the Federal Planning Factors in the development of the LRTP. The 2040 LRTP includes a section that identifies how it has addressed the eight Federal Planning Factors that were established before the FAST Act. By including this simple yet detailed section, the reader can easily identify how each requirement has been incorporated.

- The plan's project evaluation process- In order to comply with air quality requirements, the DRCOG developed a project evaluation process that delineates projects that are "regionally significant for air quality conformity purposes" from projects that are not regionally significant. Only regionally significant projects are included in the LRTP. Projects include: roadway capacity, interchange capacity, and rapid transit capacity. The project evaluation process involved roadway capacity projects and transit capacity projects. For roadway capacity projects, the Regional Roadway System (RRS) was updated, and represents corridors that are significant to the region. Projects on the RRS were scored and evaluated for regional funding. In addition, locally identified projects that were funded by local funding sources were reviewed from the previous 2035 LRTP. The rapid transit projects were updated from the 2035 LRTP, and additional projects were submitted for consideration. Two identified BRT projects were evaluated along with the roadway capacity projects because of their regional significance for air quality purposes. Together, the system was evaluated as a whole, which allowed for the development of an integrated transportation network.

The DRCOG has gone to great lengths to ensure that its regional vision is being implemented and incorporated into LRTP. Through its innovative visioning process, the transportation component reflects regional priorities. The LRTP also reflects the Federal Planning Factors that were established before the FAST Act, and includes an analysis of how each has been addressed. The LRTP's project evaluation process allows for the consideration of the regional network as a whole.

The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life

Southern California Association of Governments (SCAG), Los Angeles, CA

Counties Served: 6
MPO Area Covered: 38,649 sq. mi.
LRTP Adopted: April 2016
MPO 2010 Population: 18,051,203

About the MPO

The Southern California Association of Governments (SCAG) was federally designated in 1975 as the Metropolitan Planning Organization (MPO) for the greater Los Angeles, CA region serving Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties, that includes 191 cities. The region's vision for 2040 addresses growth and increased mixed-use development, and compact, walkable urban centers and regional connectivity. It is important to note, however, that the SCAG recognizes that a compact, mixed-use development pattern is not desired by everyone. Therefore, it does leave local land use decisions up to local governments, while supporting the overall regional vision. The SCAG organizational structure consists of a General Assembly and an 86-member Regional Council that is supported by four committees. The General Assembly meets at least once a year and consists of representation from all of the SCAG's member governments. The Regional Council serves as the MPO's governing board. The SCAG region consists of 38,649 square miles and had an estimated population of 18 million in 2010.[20] The region projects its population will to grow to over 22 million people by 2040.

The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life

Due to the sheer size of the MPO planning area, the SCAG has developed an integrated and coordinated transportation plan to serve the region's diverse needs. *The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life* was adopted in April of 2016 and serves as the region's LRTP. To support the MPO's regional vision of an integrated transportation system, the SCAG identified major initiatives during the planning process for the LRTP, and incorporated them into the Plan. These include: preserving the existing system, expanding the transit system and passenger rail, increasing highway and arterial roadway capacity, managing system demand, improving performance, promoting active transportation, strengthening the

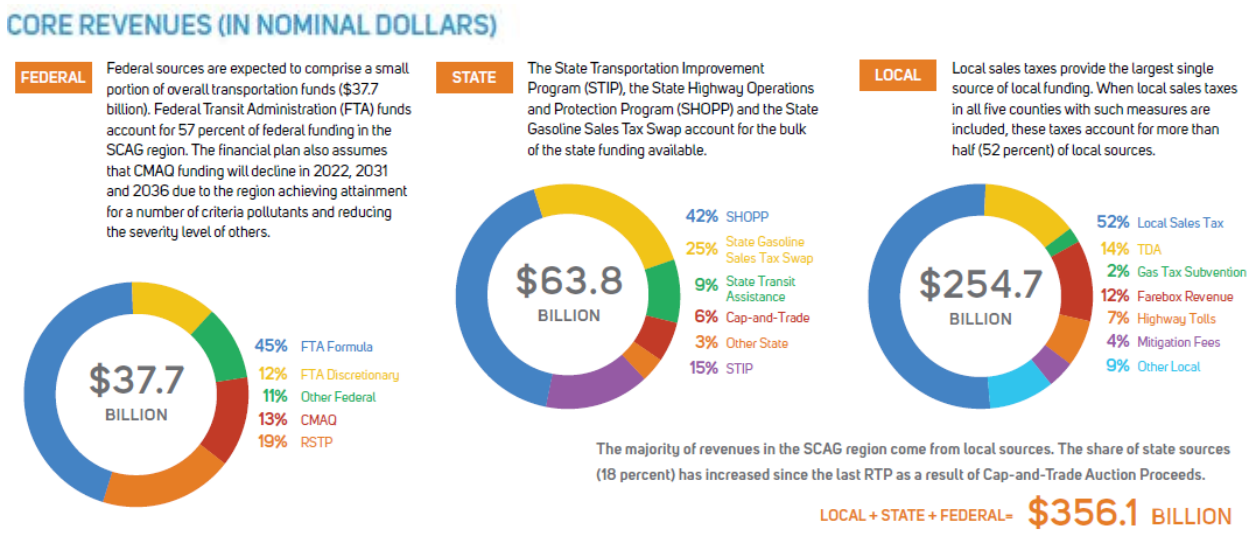
[20] *Southern California Association of Governments (SCAG).* Metropolitan Planning Organization (MPO) Database. United States Department of Transportation. https://www.planning.dot.gov/mpo.asp

regional network for goods movement, leveraging technology, improving airport access, increasing transit-oriented development, air quality improvement, and preserving open space. Similar to the *Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040,* this LRTP has been combined with the region's Sustainable Communities Strategy, which was developed to comply with state law. Therefore, the LRTP has also been developed with a focus on sustainability- and how the region can develop to address regional needs sustainably.

Key Highlights of this LRTP:

- Livability Focus- - The LRTP has been developed with a focus on sustainability and livability. It includes various techniques to promote transit-oriented development land use patterns, including Livable Corridors Strategies, High Quality Transit Areas, and Transit Priority Areas. The "Livable Corridors Strategies" transform existing commercial strip corridors into areas with increased economic activity and accessibility to multiple modes through innovative land use and transportation planning. In addition, the LRTP identifies "High Quality Transit Areas" which are defined as areas that are located within a one-half mile radius of a fixed guideway transit stop that provides service, including transit corridors where service picks up passengers every 15 minutes or less during peak hours. The land use patterns established in the LRTP focuses development into these regions. The SCAG also identifies "Transit Priority Areas" in the LRTP—areas where at least two "high frequency transit routes" intersect and have also been identified as priority locations for future development. Combined, this innovative land use strategy promotes sustainable growth while using existing infrastructure to serve future demand.

- Financial strategies/Inclusion of public-private partnerships- In addition to core revenues already planned, the SCAG used four innovative strategies to identify reasonably available revenues for projects included in the LRTP. These strategies include: "(1) Establish a user fee-based system that better reflects the true cost of transportation, provides firewall protection for new and existing transportation funds, and ensures an equitable distribution of costs and benefits. (2) Promote national and state programs that include return-to-source guarantees, while maintaining flexibility to reward regions that continue to commit substantial local resources. (3) Leverage locally available funding with innovative financing tools (e.g., tax credits and expansion of the Transportation Infrastructure Finance and Innovation Act [TIFIA]) to attract private capital and accelerate project delivery. (4) Promote funding strategies that strengthen the federal commitment to the nation's goods movement system, recognizing the pivotal role that our region plays in domestic and international trade." In addition, the region harnesses public-private partnerships as a way to fund projects, which is permitted under 2006 State Statute, and was reauthorized under the 2009 statute through January 1, 2017.



Source: The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life, SCAG, pg. 132

- Innovative Technologies - The SCAG has included autonomous vehicles as one of the future technologies that the region needs to consider in the future. It states that by 2040, automated vehicle features could be incorporated into almost 70 percent of vehicles. The Plan identifies various types of autonomous vehicle technology that the region must consider, including: "Jam-Assist and Advanced Collision Avoidance, Semi-Automated Mode Vehicles, Fully Automated Mode Vehicles, Fully Automated Vehicles, and Fully Autonomous Vehicles." Consideration of these technologies is important for long range planning, now more than ever.

The SCAG has identified regional land use strategies that promote sustainability through planning for strategic growth in the region's limited open space that is suitable for development. Combined with innovative financing strategies to build on core existing revenues, the region can strategically identify available funds. Taking into account the future of the transportation system is the essential element to long range planning, and planning for autonomous vehicles is one of the biggest challenges this country will face in the next 20 years. Therefore, it is important to start now.

Moving Forward 2040: Regional Transportation Plan

Pikes Peak Area Council of Governments (PPACG), Colorado Springs, CO

Counties Served: 3
MPO Area Covered: 4,918 sq. mi.
Plan Adopted: Nov 2015
MPO 2010 Population: 650,673

About the MPO

The Pikes Peak Area Council of Governments (PPACG) was federally designated in 1977 as the Metropolitan Planning Organization (MPO) for the Colorado Springs, CO region. It serves El Paso, Park, and Teller counties that includes the municipalities of Alma, Calhan, Colorado Springs, Cripple Creek, Fairplay, Fountain, Green Mountain Falls, Manitou Springs, Monument, Palmer Lake, Ramah, Victor, and Woodland Park. The mission of the PPACG is to create a "continuing, cooperative, and comprehensive process to help ensure mobility, safety, and efficiency in our transportation system." The organizational structure of the PPACG consists of a 52-member Board of Directors that is supported by seven committees. The Board of Directors consists of elected officials from each of the member jurisdictions, key agencies, and military installations. The PPACG region consists of 4,918 square miles and had an estimated population of 650,673 in 2010.[21] The region projects its population will to grow to over 1 million people by 2040.

Moving Forward 2040: Regional Transportation Plan

The PPACG has developed an LRTP that supports the region's vision of promoting a comprehensive and integrated transportation network. The LRTP outlines the region's priorities to its guide future investments. The *Moving Forward 2040: Regional Transportation Plan* was adopted in November of 2015 and serves as the region's LRTP. The PPACG was nationally recognized by FHWA for their 2035 LRTP, and the 2040 update builds on many of the concepts established in the 2035 plan. The 2040 LRTP's vision is "to create a sustainable multi-modal transportation system that meets regional mobility and accessibility expectations as essential elements of the Pikes Peak Area's quality of life." It includes a mission statement along with 10 principles to carry out the Plan's vision. The LRTP also includes 13 goals and performance measures related to plan implementation.

[21] *Pikes Peak Area Council of Governments (PPACG).* Metropolitan Planning Organization (MPO) Database. United States Department of Transportation. https://www.planning.dot.gov/mpo.asp

Key Highlights of this LRTP:

- Innovative financial strategies identified- The financial component of the LRTP highlights a three-step innovative process that allowed for the identification of funding available to projects included in the LRTP. The process focuses on transportation system maintenance, operation, and expansion. It is outlined as follows:
  1. "Costs of adding new capacity were calculated by inflating project costs from PPACG's *2035 Moving Forward Update* plan (2012), including significant construction-cost increases experienced from 2010 through 2014. The 2014 base level was then extended into the future by adding a 5 percent annual inflation rate."
  2. "Cost estimates for routine maintenance and life-cycle replacement were developed using USDOT's Highway Economic Resource System for States. This methodology developed per-mile costs for routine maintenance and life-cycle replacement per functional lane mile classification (principal arterial, minor arterial, collector, and local streets.). Routine maintenance includes patching, joint and crack filling, slope repair, drainage structure clearing, cutting and clearing vegetation, sweeping and clearing debris, striping, and pavement repairs. Life-cycle treatments include periodic application of bituminous overlays, seal treatments, milling, crack routing and filling, and base repair."
  3. "Revenue estimates were adjusted to a year-of-expenditure level. CDOT's Office of Financial Management and Budget provided the Pikes Peak MPO a year-by-year forecast of revenues' adjusted for inflation. The policies and assumptions used to determine the growth rates for anticipated revenues are listed in the Colorado Department of Transportation 2040 Revenue Forecast and Resource Allocation dated March 2014."

  While funding demands have increased over time, revenues have remained somewhat stagnant. As an innovative solution to limited funds, the Governor of the State of Colorado identified funding transportation projects as a priority through the creation of a Transportation Finance and Implementation Panel in 2007. The panel recommended changing the current structure of taxes and fees in the region to allow for the collection of more than one source of funding, while at the same time distributing the cost among multiple sources. This allows for much more flexibility in fund generation and increase in returns.

The PPACG incorporates a unique approach to identifying potential funding sources. Through a concerted effort made statewide, the region was able to identify potential new sources of funding that provide the region with the flexibility needed to raise adequate funds.

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ADDRESSING COMPLIANCE OF THE 2045 LRTP UPDATE WITH FEDERAL, STATE, REGIONAL AND LOCAL REQUIREMENTS

04

PLAN ELEMENTS FOR FUTURE CONSIDERATION

CHAPTER HIGHLIGHTS:

- **FIXING AMERICA'S SURFACE TRANSPORTATION (FAST) ACT**
  - FEDERAL PLANNING FACTORS
  - INTERCITY BUSES
  - PARTICIPATION BY INTERESTED PARTIES
  - COORDINATION WITH OTHER PLANNING OFFICIALS
- **PERFORMANCE-BASED PLANNING**
  - NATIONAL PERFORMANCE MANAGEMENT MEASURES
- **STATE STATUTORY REQUIREMENTS**
  - FUTURE TECHNOLOGIES
  - INNOVATIVE FINANCING
- **FEDERAL PLANNING EMPHASIS AREAS**
  - LADDERS OF OPPORTUNITY: ACCESS TO ESSENTIAL SERVICES
- **FLORIDA PLANNING EMPHASIS AREAS**
  - COMPLETE STREETS
- **ADDITIONAL TOPICS OF EMPHASIS**
  - TRANSPORTATION AND HEALTH
  - AGING POPULATIONS

4. Plan Elements for Future Consideration

The Miami-Dade Transportation Planning Organization (TPO) was nationally recognized for the 2040 Long Range Transportation Plan (LRTP) and was granted the Award of Excellence by the Florida Gold Coast Section Chapter of the American Planning Association in 2014. After a review of the 2040 LRTP, this section includes recommendations on material for incorporation into the Miami-Dade TPO 2045 LRTP update. Federal and state requirements, Planning Emphasis Areas, and additional topics of emphasis were reviewed with a focus on identifying innovative and fresh ideas that could be applied to the LRTP. Suggested additions include elements related to process improvements, as well as the incorporation of emerging technologies. These elements will assist the Miami-Dade TPO in remaining a national leader in transportation planning by preparing the country's most advanced and forward looking LRTP using advanced/futuristic technologies and innovations. Preliminary elements for consideration include:

Fixing America's Surface Transportation (FAST) Act

Federal Planning Factors

Requirement: "The Metropolitan transportation process shall be continuous, cooperative, and comprehensive and provide for implementation of projects, strategies and services that will address the Federal Planning Factors," [23 CFR 450.306(a)].

1. "Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation, and
2. Enhance travel and tourism."

[23 USC 134(h)(1)]

Tourism plays a key role in the economy, and is a target industry identified by Miami-Dade County's Economic Development Partnership. According to the Greater Miami Convention and Visitor's Bureau, there were over 5.7 million arrivals at the Miami International Airport in 2015, which was up from 5.2 million in 2014. The number of overnight visitors also increased by 6.4 percent over 2014, from 3.6 million in 2014 to 3.9 million in 2015.[22] In addition to the vital role tourism plays in the local economy, the consideration of tourism is now a requirement under the Federal Planning Factors included in the FAST Act. While the 2040 LRTP acknowledged the importance of tourism to economic vitality as reflected in the goals and objectives of the LRTP, the TPO should continue to expand on these efforts.

[22] *Analysis of Current Economic Trends: Miami-Dade: 2015: Q4.* Department of Regulatory & Economic Resources- Planning Research & Economic Analysis Section. www.miamidade.gov/business/economic-development

Miami-Dade County has been involved with climate change and resiliency efforts throughout the region. In 2009, the Southeast Florida Climate Compact was formed, which consists of Miami-Dade, Broward, Monroe, and Palm Beach Counties. The Compact was formed to provide a forum for collaborative efforts between the counties as related to mitigating the potential impacts of climate change. A summit is held every year to foster collaboration related to these efforts. In addition, the *South Florida Climate Change Vulnerability Assessment and Adaptation Pilot Project* brought together the Miami-Dade TPO, Palm Beach TPA, and Broward MPO to assess the region's vulnerability to potential hazards. The pilot project included a list of recommendations that the three TPO/MPOs could incorporate into their planning process. The recommendations related to transportation policy, planning, and project prioritization include:

- "Develop a goal statement relating to climate change that can be used as part of the transportation planning process
- Identify climate change-related prioritization criteria that can be used as part of the project priority/programming process
- Identify and apply performance measures to promote transportation system resiliency
- Apply tools to identify and assess continuing climate change-related impacts"[23]

In addition, Miami-Dade County's *Local Mitigation Strategy*[24] also includes a vulnerability assessment, with goals and objectives for mitigating against potential hazards. Data provided in the study could aid in the development of a resiliency component to the Miami-Dade 2045 LRTP.

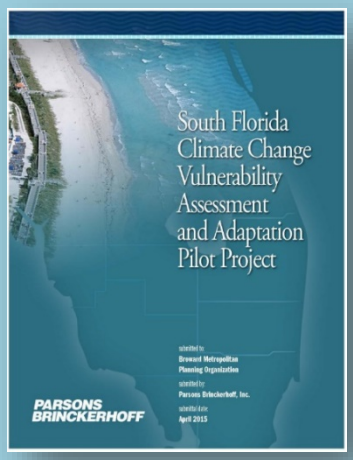


Image Above Source: South Florida Climate Change Vulnerability Assessment and Adaptation Pilot Project, Miami-Dade Metropolitan Planning Organization, Broward Metropolitan Planning Organization, Monroe County Planning and Environmental Resources Department, Palm Beach Metropolitan Planning Organization.

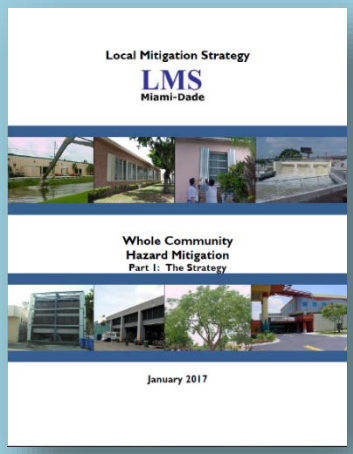


Image Above Source: Miami-Dade County Local Mitigation Strategy, Miami-Dade County.

[23] *South Florida Climate Change Vulnerability Assessment and Adaptation Pilot Project.* Miami-Dade Metropolitan Planning Organization, Broward Metropolitan Planning Organization, Monroe County Planning and Environmental Resources Department, Palm Beach Metropolitan Planning Organization. April 10, 2015.

[24] *Miami-Dade County Local Mitigation Strategy*. Miami-Dade County. January 2017. http://www.miamidade.gov/fire/mitigation.asp

Recommendations:

- **Include the two new Federal Planning Factors under the FAST Act:**
    1. **"Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation" and**
    2. **"Enhance travel and tourism" in the planning process. Continue to include the Federal Planning Factors into the goals and objectives of the LRTP.**
- **Consider locations of major hotel clusters and major tourist attractions such as the Port of Miami, Miami Beach, Miami International Airport, Miami Intermodal Center, multimodal centers, intermodal facilities, etc., and ensure there is adequate connectivity between them.**
- **Consider expanding on the resiliency component of the LRTP through the incorporation of the results from the *South Florida Climate Change Vulnerability Assessment and Adaptation Pilot Project*, as well as coordination with Miami-Dade County's *Local Mitigation Strategy,* Floodplain and Flood zone maps, and other data related to flooding potential in the region. Consider the locations of flood zones and flood plains when evaluating projects in the LRTP. Projects located in these regions should include adequate infrastructure hardening to prepare for potential impacts.**

Intercity Buses

Requirement: The TPO LRTP must consider "the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost-effective manner; and strategies and investments that preserve and enhance intercity bus systems (including those that are privately owned and operated." [23 USC 134(i)(2)(H)]

Recommendation: Coordinate with intercity bus operators and examine the locations of terminals/intermodal centers to determine multimodal connectivity of the transportation system.

Participation by Interested Parties

Requirement: "Each metropolitan planning organization shall provide citizens, affected public agencies, representatives of public transportation employees, public ports, freight shippers, providers of freight transportation services, private providers of transportation (including intercity bus operators, employer-based commuting programs, such as a carpool program, vanpool program, transit benefit program, parking cash-out program, shuttle program, or telework program), representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan." [23 USC 134(i)(6)(A)]

In addition, "the metropolitan planning organization shall, to the maximum extent practicable… employ visualization techniques to describe plans." [23 USC 134(i)(6)(C)]

Public ports and certain private providers of transportation, including intercity bus operators and employer-based commuting programs are now part of the list of interested parties that an MPO must provide a reasonable opportunity to comment on the LRTP.

Recommendation: Give representatives from private providers of transportation, including intercity bus operators and employer-based commuting programs adequate notice to comment on the LRTP. Also include them in the public involvement process. This could be accomplished through the involvement of the American Intercity Bus Riders Association (AIBRA). Major providers of transportation include:

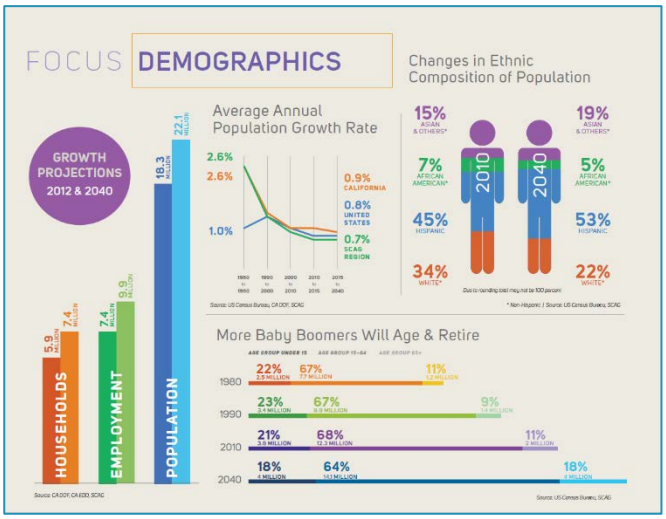
- **Amtrak**
- **Greyhound**
- **Red Coach USA**
- **Megabus**
- **The Florida Express Bus**
- **La Cubana**
- **Tornado Bus Company**
- **Florida Shuttle Now**
- **Go Buses**
- **Florida Shuttle Transportation**

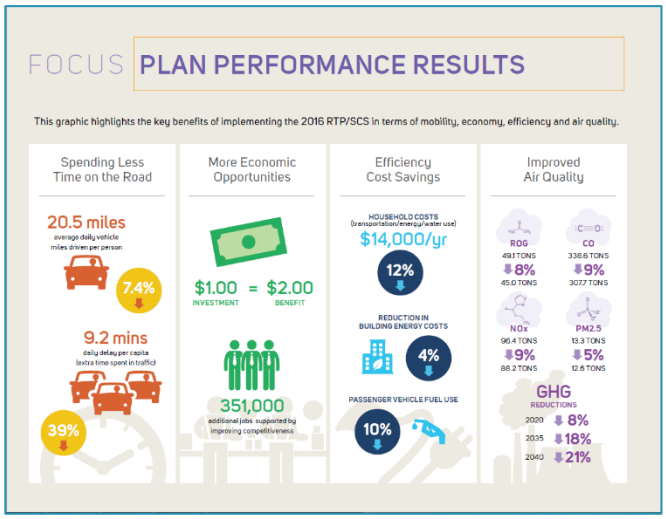
Additional providers of transportation not part of the AIBRA include:

- **Brightline Train**
- **Smart Shuttle Line**
- **Jet Set Express**

The LRTP public participation plan is also required to include visualization techniques to describe the plan. The *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* adopted in April 2016 by the Southern California Association of Governments (SCAG), includes several examples of innovative visualization techniques as shown in **Figure 3: Visualization Examples from the SCAG LRTP** below:

Figure 3: Visualization Examples from the SCAG LRTP





Source: The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life, SCAG, pg. 48, pg. 152

Recommendation: Continue to incorporate new and innovative visualization techniques. Ideas include the incorporation of an LRTP dashboard that includes demographic and socioeconomic information, project information, and trends within the region.

Coordination with Other Planning Officials

Requirement: "The Secretary shall encourage each metropolitan planning organization to consult with officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, tourism, natural disaster risk reduction, environmental protection, airport operations, and freight movements) or to coordinate its planning process, to the maximum extent practicable, with such planning activities." [49 USC 5303(g)(3)]

It is now a requirement under the FAST Act for MPOs to include officials responsible for tourism and the reduction of risk of natural disasters in the LRTP process.

Recommendations:

- **Regarding tourism, include a member or members from the following agencies in the LRTP planning process:**
  - **Miami-Dade Visitors Bureau**
  - **Beacon Council, Miami-Dade County Economic Partnership**
- **Regarding resiliency and reducing the risk of natural disasters, coordinate with the appropriate agencies to determine if they can be incorporated into the planning process. Include a member or members from the following agencies in the LRTP Steering Committee:**
  - **Miami-Dade Office of Emergency Management**
  - **Miami-Dade Office of Resilience**

Performance-Based Planning

The incorporation of performance measures is key to the development of the LRTP. It is important to note that performance-based planning exists at two levels: the system and project level. At the system level, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) identified performance measures that have been incorporated into a series of Rulemakings applicable to MPOs. They are known as the National Performance Management Measures, and were developed to address the National Goals established under the Moving Ahead for Progress in the 21st Century Act (MAP-21). The LRTP is required to incorporate a performance-based approach that addresses these National Performance Management Measures. The Federal Rules that establish the National Performance Management Measures applicable to MPOs are:

- **Infrastructure**- Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program [23 CFR § 490]
- **Safety-** Highway Safety Improvement Program/Safety Performance Management Measures [23 CFR §924, 23 CFR § 490]
- **System Performance-** Assessing Performance of the National Highway system, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program [23 CFR § 490]

An LRTP is required to include a system level performance report that evaluates performance of the entire transportation system based on the performance targets established to address the National Performance Management Measures. The system level performance report must address also the National Goals. In addition to the required National Performance Management Measures, the MPO can elect to include

additional performance measures at the project level that can be used to evaluate projects included in the LRTP. This section outlines the requirements associated with performance-based planning.

Requirement: "The metropolitan transportation planning process shall provide for the establishment and use of a performance based approach to transportation decision making to support the national goals described in section 150(b) of title 23 and the general purposes described in section 5301." [49 USC 5303(h)(2)(A)]

Project level performance measures in the Miami-Dade 2040 LRTP were developed as metrics to assess objectives that supported the LRTP goals which support the National Goals. The project level performance measures were used in the project evaluation process. The 2040 LRTP also addressed system performance for the baseline (Year 2010) and for the horizon year 2040, which included: vehicle miles traveled, vehicles hours traveled, peak period speed, percent lane miles with LOS F, and transit boardings.

Recommendation: Continue using the performance management process for the development of goals and project selection. The Miami-Dade TPO should develop performance measures using available data that are quantifiable. Examples can be found in Appendix 1.

Requirement: "An MPO shall integrate in the metropolitan transportation planning process, directly or by reference, the goals, objectives, performance measures, and targets described in other State transportation plans and transportation processes, as well as any plans developed under 49 U.S.C. chapter 53 by providers of public transportation, required as part of a performance-based program including…the State Asset Management Plan…the Transit Asset Management Plan…" [23 CFR 450.306(d)(4)]

The Miami-Dade 2040 LRTP did consider and acknowledge the importance of consistency with other plans and policies that affect transportation issues. Federal, state, and local/regional plans and studies reviewed as part of the LRTP process were identified. The goals and objectives of the plan were directly linked to the MAP-21 National Goals.

Recommendation: Continue to incorporate the goals, objectives, performance measures, and targets of other plans and studies into the planning process for the 2045 LRTP, including the Highway Safety Improvement Program (HSIP), State Highway Safety Plan (SHSP), the State Asset Management Plan for the National Highway System (NHS), the State Freight Plan, the Transit Asset Management Plan, and the Public Transportation Agency Safety Plan.

National Performance Management Measures

Requirement: "Each metropolitan planning organization shall establish performance targets that address the performance measures described in section 150(c) of title 23, where applicable, to use in tracking progress towards attainment of critical outcomes for the region of the metropolitan planning organization. Selection of performance targets by a metropolitan planning organization shall be coordinated with the relevant State to ensure consistency, to the maximum extent practicable." [49 USC 5303(h)(2)(B)]

The 2040 LRTP evaluated performance at the system level in Miami-Dade, which is what was required under MAP-21. At the time of the last LRTP update, the National Performance Management Measures were under development by FHWA and FTA. They have since been finalized. As a result, states and MPOs will need to start developing performance targets for each National Performance Management Measure and incorporate them into the LRTP. The TPO should continue coordination efforts with FDOT, to determine how the TPO will report progress on meeting their targets.

Recommendation: Coordinate with FDOT to identify and report on performance targets as required under MAP-21 and the FAST Act. The state targets should be listed and the TPO should state that they are adopting the state's targets. The 2045 LRTP should identify and report the performance achieved in meeting its performance targets in relation to previous reports and baseline data. Consider showing the history of each measure over time and progression toward meeting or achieving the targets.

The Miami-Dade TPO will either need to adopt the state's performance targets for the National Performance Management Measures or establish their own. The TPO should consider incorporating the system performance targets they choose to use into the project evaluation process for the LRTP. Doing so would allow special consideration for projects that address the TPOs' targets.

Incorporation of performance targets into the project evaluation criteria would allow for an expanded focus on safety and security, infrastructure, and system performance elements of the LRTP, providing for a direct linkage between target setting and project implementation.

Recommendation: Incorporate identified performance targets into the project evaluation criteria for the LRTP. (During project evaluation, projects that help to achieve the performance targets can be weighted higher.) Also, identify areas (locations) that fall below the targets for each performance measure and use them in developing and prioritizing projects in the LRTP. By addressing areas that fall below the target, the TPO will align investments with goals.

Requirement: Each LRTP must include "a system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets described in subsection (h)(2), including (i) progress achieved by the metropolitan planning organization in meeting the performance targets in comparison with system performance recorded in previous reports; and (ii) for metropolitan planning organizations that voluntarily elect to develop multiple scenarios, an analysis of how the preferred scenario has improved the conditions and performance of the transportation system and how changes in local policies and investments have impacted the costs necessary to achieve the identified performance targets." [49 USC 5303(i)(2)(C)]

The Miami-Dade TPO is required to develop a system performance report to be included in the LRTP. In this report, it should include baseline condition/performance and progress toward the achievement of targets. The performance report should include: the definition of each performance measure, graphics, and historical performance. This report will be documented in a manner mutually agreed upon with FDOT. This format has not been established to date. FDOT will provide the resulting data for the required National Performance Management Measures. The report must address the National Performance Management Measures and MAP-21 National Goals identified by USDOT.

Additionally, MPOs **may voluntarily elect** to conduct scenario planning during the development of their LRTPs. If scenario planning is incorporated into the LRTP process, the MPO must include an analysis of how the preferred scenario improves the condition and performance of the transportation system in the System Performance Report.

Recommendations:

- **Identify the following which can be used for comparison between future performance reports and for use in developing the Needs Plan:**
  - **Safety – locations with high rates of fatalities, serious injuries, and non-motorized fatalities and serious injuries**
  - **Infrastructure – locations of interstate, non-interstate NHS facilities, and bridges in poor condition.**
  - **System Performance – interstate and non-interstate facilities that are not reliable.**

Identify other system performance measures in addition to the required National Performance Management Measures early in the planning process to ensure that the data required is available and is reported out of the travel demand model. Coordinate with the Southeast Florida Transportation Council (SEFTC) Regional Transportation Technical Advisory Committee (RTTAC) Modeling Subcommittee as to the information that can be provided by the Southeast Florida Regional Planning

Model (SERPM) to measure system performance. A computer program may need to be written to obtain requested information that is not readily available from the model.

State Statutory Requirements

Future Technologies

Requirement: MPO transportation plans must "make the most efficient use of existing transportation facilities to relieve vehicular congestion, improve safety, and maximize the mobility of people and goods. Such efforts must include, but are not limited to, consideration of infrastructure and technological improvements necessary to accommodate advances in vehicle technology, such as autonomous technology and other developments." [339.175(7), F.S.]

Planning for the advancement in vehicle technology is a requirement under Florida Statutes. This includes planning for connected and autonomous vehicles. There are various ways MPOs can plan for the transition to connected/autonomous vehicles (CAV). Scenario planning can be used as a way to forecast the projected impact of the CAV technology on the market. For example, the *Atlanta Region's Plan Transportation Element* by the Atlanta Regional Commission (ARC) used three scenarios in their planning process. The first one is "technological advancements," which depicts how the region will look given certain technological advancements such as in communication, and how it would impact how people travel throughout the region. The second, "autonomous vehicles," depicts how the region will be impacted by investments in new vehicle technology such as autonomous vehicles and connected vehicles. Finally, the third, "transit connected regional centers," depicts how the region would be impacted by locating growth around transit networks to prioritize strategic transit expansion.

Recommendations:

- **Inventory existing facilities to identify gaps and those that will need to be upgraded to support CAV technology in the LRTP. This includes existing fiber optic cable, communication infrastructure, and signals.**

- **Include estimates of "regional CAV market penetration" to plan for the predicted impact of CAV in the region. [25]**

[25] *Connected Vehicle Impacts on Transportation Planning.* Federal Highway Administration. June 2016.

- **Use scenario planning in the visioning process to predict the potential impacts of CAV on infrastructure of the transportation system, and its potential impacts on security, equity, and sustainability.**

- **Incorporate performance measures as related to the phasing of CAV infrastructure into the transportation system. Data could include: crash data and any new data associated with CAV.[25]**

Innovative Financing

Requirement: MPO transportation plans must "incorporate innovative financing techniques to fund needed projects and programs. Such techniques may include the assessment of tolls, the use of value capture financing, or the use of value pricing." [339.175(7),F.S.]

Recommendation: Identify innovative financing techniques, such as combining different funding programs to expand eligibility and reduce environmental review time for projects receiving federal funding. "Look comprehensively at all available funding and blend multiple sources together to deliver priority projects faster and more efficiently."[26] In the past, the TPO has utilized a local option gas tax as a way to fund projects, and additional options include further exploration of Public Private Partnerships (P3s) as a method of alternate delivery for financing transportation projects.

Federal Planning Emphasis Areas (PEAs)

Ladders of Opportunity: Access to Essential Services

We encourage State DOTs, MPOs, and providers of public transportation, as part of the transportation planning process, to identify transportation connectivity gaps in accessing essential services. Essential services include employment, health care, schools/education, and recreation," Federal Planning Emphasis Areas, March 2015.

MPOs are encouraged to address the Federal Planning Emphasis Areas, particularly Ladders of Opportunity-Gaps to Essential Service. Methods to do so include the incorporation of Equity Analysis Measures and Communities of Concern identified throughout the region. The *Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area,* by the

[26] *The Innovative MPO, Smart Planning, Strong Communities. A Guide for Metropolitan Transportation Planning.* Transportation for America. December 2014.

Metropolitan Transportation Commission (MTC), includes several equity analysis measures, as noted earlier.

Example measures from the *Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area* include:

- Minority Persons
- Low-Income Individuals
- Persons who are Limited English Proficient
- Seniors age 75 and older
- Persons with Disabilities
- Households without Cars
- Single-Parent Households
- Renters paying more than 50% of household income on rent

The ARC also included several measures to identify and serve disadvantaged populations in their LRTP. Example measures from the *Atlanta Region's Plan Transportation Element* include:

- Percent of population in Census Tract considered to be in Poverty
- Percent of population in Census Tract that responded as African American
- Percent of population in Census Tract that responded as Asian
- Percent of population in Census Tract that responded as Hispanic
- Percent of population in Census Tract that responded as another race that is not White.

Recommendation: To address the new Federal Emphasis Area of *Ladders of Opportunity-Access to Essential Services*, incorporate Equity Analysis Measures to further identify potential impacts to disadvantaged and vulnerable populations, known as Communities of Concern. The LRTP could incorporate an analysis of how projects in the LRTP can help address impacts to disadvantaged populations. Key datasets to use include:

- **Families below the Poverty Level**
- **Households with Zero Vehicles**

Florida Planning Emphasis Areas (PEAs)

Complete Streets

"As MPOs work to meet the needs of their transportation users, consideration should be given, where appropriate, to complete streets policies that improve accessibility and public safety, address cultural needs, encourage economic development and promote mobility across all modes of transportation," Florida Planning Emphasis Areas, 2015.

Implementation of Complete Streets has been identified as a priority in the State of Florida. In 2014, FDOT adopted a Statewide Complete Streets Policy to encourage the incorporation of Complete Streets design principles throughout the state. In 2015, FDOT published a *Complete Streets Implementation Plan*[27] providing guidelines for the incorporation of these principles. The incorporation of Complete Streets principles and Context Classification Design can positively impact quality of life and promote healthy communities, and serves as a way to promote strategic areas of development. Incorporation of these principles will allow the region to identify areas where they would like to see growth in mixed-use through human-scale/size development. Miami-Dade County was recognized by USDOT as a winner of the Mayor's Challenge for Complete Streets, and has developed a *Safer People, Safer Streets Action Plan*,[28] as well as *Compete Streets Design Guidelines.*[29] The Miami-Dade TPO has also conducted extensive studies related to Complete Streets implementation.

Recommendation: Expand on the incorporation of Complete Streets design principles in the planning process during the development of the 2045 LRTP. Consider creating a goal for Complete Streets in the LRTP, and incorporating complete streets into the design phase of project development.

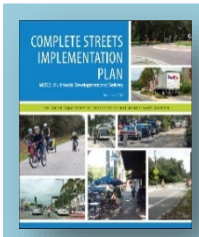


Image Left Source: Complete Streets Implementation Plan:M2D2: Multimodal Development and Delivery. FDOT.

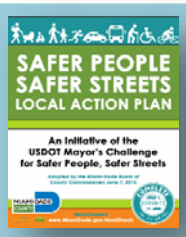


Image Left Source: Safer People, Safer Streets Local Action Plan: An Imitative of the USDOT Mayor's Challenge for Safer People, Safer Streets. Miami-Dade County. Miami-Dade County.

Image Left Source: Complete Streets Design Guidelines. Miami-Dade County.

[27] *Complete Streets Implementation Plan:M2D2: Multimodal Development and Delivery.* Florida Department of Transportation. December 2015. http://www.flcompletestreets.com/CSIPlan.shtm

[28] *Safer People, Safer Streets Local Action Plan: An Imitative of the USDOT Mayor's Challenge for Safer People, Safer Streets.* Miami-Dade County. June 7, 2016. http://www.miamidade.gov/neatstreets/local-action-plan.asp

[29] *Complete Streets Design Guidelines.* Miami-Dade County. http://www.miamidade.gov/neatstreets/library/complete-streets-design-guidelines.pdf

Additional Topics of Emphasis

Transportation and Health

A new expanding focus area is the linkage between transportation and health. The incorporation of the linkage between health and transportation is not a requirement, however it has been identified as a topic that is important to the Miami-Dade TPO. A great deal of research is currently under way related to the impacts of transportation on health; particularly mode choice and walkability.

Recommendation: Incorporate the results of health studies conducted throughout the region into the LRTP update to further explore potential health impacts. The MySidewalk Program includes a Health Impact Assessment Report for Miami-Dade County that includes a summary of statistical data related to the health and walkability of the county. Also, FHWA has developed a Transportation and Health Tool that includes data on Miami-Dade County. Consideration of this information in the LRTP project evaluation criteria could aid in the improvement of health and quality of life in the region.

Aging Populations

According to the 2010 U.S. Census, Miami-Dade County has the largest elderly population in Florida. The Miami-Dade TPO incorporated planning for its aging population in the 2040 LRTP, and has made this a priority in the region. The focus on increasing accessibility and mobility options for elderly populations was an important component of the 2040 LRTP.

Recommendation: Continue to focus on planning for the aging population in the region. Consider incorporating project prioritization criteria related to projects that improve accessibility and mobility for elderly populations. Also, identify the location of elderly population concentrations throughout the county and examine transit access to ensure its availability.

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APPENDIX 1

CHAPTER HIGHLIGHTS:

- FEDERAL AND STATE REFERENCES
- MAP-21 VS. FAST ACT MAJOR UPDATES MATRIX
- PERFORMANCE MEASURE EXAMPLES

Federal and State References

Public Law

- Public Law 114-94
- Public Law 112-141
- Public Law 115-23

United States Code

- Title 23 United States Code Chapter 1 Section 134
- Title 23 United States Code Chapter 1 Section 150
- Title 49 United States Code Subtitle III Chapter 53 Section 5303

Code of Federal Regulations

- Title 23 Code of Federal Regulations Section 490
- Title 23 Code of Federal Regulations Section 450
- Title 23 Code of Federal Regulations Section 771
- Title 23 Code of Federal Regulations Section 924
- Title 49 Code of Federal Regulations Section 625
- Title 49 Code of Federal Regulations Section 630

Florida Statutes

- Title XXVI Chapter 339 Section 175 Florida Statutes

Additional Bills

- HB 221 and SB 340 (Not yet signed by Governor)

MAP-21 Vs. FAST Act Major Updates Matrix

NOTE: The following tables provide a summary of the information taken directly from MAP-21 and the FAST Act, and the MAP-21 and FAST Act information provided by USDOT. The information has been condensed for comparison purposes. Additional information can be found at the following links:

- https://www.fhwa.dot.gov/map21/factsheets/
- https://www.fhwa.dot.gov/fastact/factsheets/

<table>
<tr><th colspan="3">FHWA- Performance Management Program</th></tr>
<tr><th colspan="2">MAP-21</th><th>FAST Act</th></tr>
<tr><td>Program purpose</td><td>A key feature of MAP-21 is the establishment of a performance- and outcome-based program. The objective of this performance- and outcome-based program is for States to invest resources in projects that collectively will make progress toward the achievement of the national goals.</td><td>The FAST Act continues MAP-21's overall performance management approach, within which States invest resources in projects that collectively will make progress toward national goals.

Note: All of the Department's performance management rulemakings will comply with the performance management provisions of the FAST Act.

Except as specified below, the FAST Act makes no changes to the performance management provisions established by MAP-21.</td></tr>
<tr><td>Statutory citation(s)</td><td>MAP-21 §§1106, 1112-1113, 1201-1203; 23 USC 119, 134-135, 148-150</td><td>FAST Act §§ 1116, 1406; 23 U.S.C. 119, 148, 150, 167</td></tr>
<tr><td>National policy in support of performance management</td><td>"Performance management will transform the Federal-aid highway program and provide a means to the most efficient investment of Federal transportation funds by refocusing on national transportation goals, increasing the accountability and transparency of the Federal-aid highway program, and improving project decision-making through "[§1203; 23 USC 150(a)]</td><td></td></tr>
<tr><td>National performance goals</td><td>Establishes national performance goals for the Federal-aid highway program in seven areas: [§1203; 23 USC 150(b)]

<table><tr><td>Goal area</td><td>National goal</td></tr><tr><td>Safety</td><td>To achieve a significant reduction in traffic fatalities and serious injuries on all public roads</td></tr><tr><td>Infrastructure condition</td><td>To maintain the highway infrastructure asset system in a state of good repair</td></tr><tr><td>Congestion reduction</td><td>To achieve a significant reduction in congestion on the National Highway System</td></tr><tr><td>System reliability</td><td>To improve the efficiency of the surface transportation system</td></tr></table></td><td></td></tr>
</table>

<table>
<tr><th colspan="3">FHWA- Performance Management Program</th></tr>
<tr><th colspan="2">MAP-21</th><th>FAST Act</th></tr>
<tr><td></td><td><table>
<tr><td>Freight movement and economic vitality</td><td>To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development</td></tr>
<tr><td>Environmental sustainability</td><td>To enhance the performance of the transportation system while protecting and enhancing the natural environment</td></tr>
<tr><td>Reduced project delivery delays</td><td>To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices</td></tr>
</table></td><td></td></tr>
<tr><td>Performance measures</td><td>Requires the Secretary, in consultation with States, metropolitan planning organizations (MPOs), and other stakeholders, to establish performance measures in the areas listed below. Provides for DOT to establish such measures within 18 months of enactment, and prohibits DOT from establishing additional performance measures. [§1203; 23 USC 150(c)]

• Pavement condition on the Interstate System and on remainder of the National Highway System (NHS)
• Performance of the Interstate System and the remainder of the NHS
• Bridge condition on the NHS
• Fatalities and serious injuries—both number and rate per vehicle mile traveled--on all public roads
• Traffic congestion
• On-road mobile source emissions
• Freight movement on the Interstate System</td><td>Freight performance measure
MAP-21 required DOT to establish performance measures in a number of areas, including the assessment of freight movement on the Interstate System. MAP-21 also required each State to set performance targets for these measures. The FAST Act now requires that if the Administrator determines that a State has failed to meet (or to make significant progress toward meeting) its freight performance targets within two years after the establishment of the targets, the State must describe in its next performance report to DOT the actions it will take to achieve these targets. [FAST Act § 1116; 23 U.S.C. 167(j)]

"If the Administrator determines that a State has not met or made significant progress toward meeting the performance targets related to freight movement of the State established under section 150(d) by the date that is 2 years after the date of the establishment of the performance targets, the State shall include in the next report submitted under section 150(e) a description of the actions the State will undertake to achieve the targets, including-</td></tr>
</table>

FHWA- Performance Management Program		
MAP-21		FAST Act
		(1) an identification of significant freight system trends, needs, and issues within the State; (2) a description of the freight policies and strategies that will guide the freight-related transportation investments of the State; (3) an inventory of freight bottlenecks within the State and a description of the ways in which the State is allocating national highway freight program funds to improve those bottlenecks; and (4) a description of the actions the State will undertake to meet the performance targets of the State." [FAST Act § 1116; 23 U.S.C. 167(j)]
Performance targets	• *Setting of State targets.* Within one year of the DOT final rule on performance measures, requires States to set performance targets in support of those measures. States may set different performance targets for urbanized and rural areas. [§1203; 23 USC 150(d)] To ensure consistency each State must, to the maximum extent practicable – o coordinate with an MPO when setting performance targets for the area represented by that MPO; and o coordinate with public transportation providers when setting performance targets in an urbanized area not represented by an MPO. [§1202; 23 USC 135(d)(2)(B)] • *Setting of MPO targets.* Within 180 days of States or providers of public transportation setting performance targets, requires MPOs to set performance targets in relation to the performance measures (where applicable). To ensure consistency, each MPO must, to the maximum extent practicable, coordinate with the relevant State and public transportation providers when setting performance targets. [§1201; 23 USC 134(h)(2)].	

FHWA- Performance Management Program		
	MAP-21	**FAST Act**
	• *Plans requiring targets*. Requires the following plans to include State targets (and/or MPO targets, as appropriate): o Metropolitan transportation plans. [§1201; 23 USC 134(i)(2)(B)] o Metropolitan Transportation Improvement Program (TIP). [§1201; 23 USC 134(j)(2)(D)] o Statewide Transportation Improvement Program (STIP). [§1202; 23 USC 135(g)(4)] o State asset management plans under the National Highway Performance Program (NHPP). [§1106; 23 USC 119(e)] o State performance plans under the Congestion Mitigation and Air Quality Improvement program. [§1113(b)(6); 23 USC 149(l)] Additionally, State and MPO targets should be included in Statewide transportation plans. [§1202; 23 USC 135(f)(7)] • *Reporting on progress*. Requires States to report on the condition and performance of the NHS; the effectiveness of the investment strategy document in the State asset management plan for the NHS; progress toward achieving performance targets; and the ways in which the State is addressing congestion at freight bottlenecks. [§1203; 23 USC 150(e)]	
Thresholds for bridge and pavement condition	• *Establishment of thresholds.* Requires DOT to establish, as part of its rulemaking on performance measures, minimum thresholds for Interstate pavement condition. [§1203; 23 USC 150(c)(3)] Requires each State to maintain minimum thresholds for Interstate pavement condition (the level set by DOT in its rulemaking) and NHS bridges (no more than 10% of total NHS bridge deck area may be on structurally deficient bridges). [§1106; 23 USC 119(f)] • *Failure to meet thresholds.* Requires a State that fails to meet or maintain these thresholds over a statutorily-designated time period to reserve a specified portion of its NHPP funding for Interstate pavement and NHS bridge projects. In some cases also requires the State to transfer a specified portion of its Surface Transportation Program (STP) funding to NHPP. (See NHPP fact sheet for detail) [§1106; 23 USC 119(f)]	**Interstate system condition** Under MAP-21, if the condition of a State's Interstate pavements (excluding bridges) fell below a minimum condition level established by DOT, the State was required to dedicate certain funds for use on Interstate maintenance. To trigger this penalty, the condition needed to fall below the minimum level for two consecutive reporting periods. The FAST Act adjusts the timeframe for review for triggering the penalty by removing the requirement that this decline in condition level is shown during "2-consecutive reporting periods" to trigger the penalty. [FAST Act § 1406(a)(2); 23 U.S.C. 119(f)(1)(A)] "If, ~~during 2 consecutive reporting periods, the condition of the interstate System, excluding bridges on the Interstate System, in a State falls~~ *a State reports that the condition of the Interstate System, excluding bridges on the Interstate System, has fallen* below

FHWA- Performance Management Program		
MAP-21		FAST Act
		the minimum condition level established by the Secretary under section 150(c)(3), the State shall be required, during the following fiscal year- (i) to obligate, from the amounts apportioned to the State under section 104(b)(1), an amount that is not less than the amount of funds apportioned to the State for fiscal year 2009 under the Interstate maintenance program for the purposes described in this section (as in effect on the day before the date of enactment of the MAP–21), except that for each year after fiscal year 2013, the amount required to be obligated under this clause shall be increased by 2 percent over the amount required to be obligated in the previous fiscal year; and (ii) to transfer, from the amounts apportioned to the State under section 104(b)(2) (other than amounts suballocated to metropolitan areas and other areas of the State under section 133(d)) to the apportionment of the State under section 104(b)(1), an amount equal to 10 percent of the amount of funds apportioned to the State for fiscal year 2009 under the Interstate maintenance program for the purposes described in this section (as in effect on the day before the date of enactment of the MAP–21).” [FAST Act § 1406(a)(2); 23 U.S.C. 119(f)(1)(A)]
Trends in safety performance	Imposes additional requirements on a State in relation to specified measures of highway safety: [§1112; 23 USC 148(g)] • *Rural road safety.* If the fatality rate on rural roads in a State increases over the most recent two year period, the State must dedicate a specified amount of funds under the Highway Safety Improvement Program for high risk rural road safety projects. • *Older driver and pedestrian safety.* If the traffic fatalities and serious injuries per capita for drivers and pedestrians over the age of 65 in a State increase over the most recent two year period, the State must	

FHWA- Performance Management Program		
MAP-21		**FAST Act**
	detail in its next Strategic Highway Safety Plan how it intends to address increases in those rates.	
Other accountability measures	• *Target achievement under NHPP.* Requires a State that fails to achieve (or to make significant progress toward achieving) its performance targets for the NHS for 2 consecutive reports to describe in its next performance report to DOT (under amended 23 USC 150(e)) the actions it will take to achieve its targets. [§1106; 23 USC 119(e)(7)] • *Target achievement under HSIP.* Requires a State that fails to achieve (or to make significant progress toward achieving) its HSIP performance targets within two years of the targets' establishment to – o dedicate a specified portion of its obligation authority to HSIP projects until the Secretary determines that the State has made significant progress toward or met the targets; and o annually submit to the Secretary an implementation plan that includes certain specified components related to highway safety until the Secretary determines that the State has made significant progress toward or met the targets. [§1112; 23 USC 148(i)] • *Certification of planning process for Transportation Management Areas (TMAs).* Continues to require the Secretary to certify at least once every four years whether the metropolitan planning process of an MPO serving a TMA meets the requirements, including the requirements of 23 USC 134 and other applicable Federal law. One of these requirements is to include a performance-based approach in the metropolitan transportation planning process (see 23 USC 134(h)(2)). Absent this certification, DOT may withhold up to 20% of the funds attributable to the metropolitan planning area. [§1201; 23 USC 134(k)(5)]	**Performance period adjustment** The FAST Act shortens the timeframe for States and metropolitan planning organizations to make progress toward meeting their performance targets under the National Highway Performance Program: "A State that does not achieve or make significant progress toward achieving the targets of the State for performance measures described in section 150(d) for the National Highway System ~~for 2 consecutive reports submitted under this paragraph~~ *shall include as part of the performance target report under section 150(e)* a description of the actions the State will undertake to achieve the targets." [§1106; 23 USC 119(e)(7)] The FAST Act also clarifies the significant progress timeline for the Highway Safety Improvement Program performance targets. "If the Secretary determines that a State has not met or made significant progress toward meeting the *safety* performance targets of the State established under section 150(d) ~~by the date that is 2 years after the date of the establishment of the performance targets~~, the State shall- (1) use obligation authority equal to the apportionment of the State for the prior year under section 104(b)(3) only for highway safety improvement projects under this section until the Secretary determines that the State has met or made significant progress toward meeting the *safety* performance targets of the State; and (2) submit annually to the Secretary, until the Secretary determines that the State has met or made significant progress toward meeting the *safety* performance targets of the State, an implementation plan that-

FHWA- Performance Management Program		
MAP-21		FAST Act
		(A) identifies roadway features that constitute a hazard to road users; (B) identifies highway safety improvement projects on the basis of crash experience, crash potential, or other data-supported means; (C) describes how highway safety improvement program funds will be allocated, including projects, activities, and strategies to be implemented; (D) describes how the proposed projects, activities, and strategies funded under the State highway safety improvement program will allow the State to make progress toward achieving the safety safety 1 performance targets of the State; and (E) describes the actions the State will undertake to meet the *safety* performance targets of the State. " [FAST Act § 1406(a)(1) and (b); 23 U.S.C. 119(e)(7) and 148(i)]

FHWA- Metropolitan Planning Program		
MAP-21		FAST Act
Program Purpose	The metropolitan planning process establishes a cooperative, continuous, and comprehensive framework for making transportation investment decisions in metropolitan areas. Program oversight is a joint Federal Highway Administration/Federal Transit Administration responsibility.	The FAST Act continues the Metropolitan Planning program. The Program establishes a cooperative, continuous, and comprehensive framework for making transportation investment decisions in metropolitan areas. Program oversight is a joint Federal Highway Administration/Federal Transit Administration responsibility.
Statutory and regulatory citation(s):	MAP-21§§ 1105, 1201; 23 USC 104, 134; 23 CFR Part 450	FAST Act § 1201; 23 U.S.C. 134
Funding	**Year** / **Authorization** **2013** / $ 311 M **2014** / $ 314 M **Calculated (sum of estimated individual State Metropolitan Planning apportionments)*	**Fiscal year** / **Estimated funding*** **2016** / $329 M **2017** / $336 M **2018** / $343 M

FHWA- Metropolitan Planning Program		
	MAP-21	**FAST Act**
	Funded by contract authority from the Highway Account of the Highway Trust Fund. Funds are subject to the overall Federal-aid obligation limitation. MAP-21 has a new approach to formula program funding, authorizing a lump sum total instead of individual authorizations for each program. Once each State's combined total apportionment is calculated, an amount is set aside for the State's Metropolitan Planning program via a calculation based on the relative size of the State's FY 2009 Metropolitan Planning apportionment. (See "Apportionment" fact sheet for a description of this calculation.) <u>Set-asides</u> From the State's Metropolitan Planning apportionment, a proportionate share of funds for the State's Transportation Alternatives Program is to be set aside. (See "Apportionment" fact sheet for a description of this calculation). **Federal share:** Determined in accordance with 23 USC 120.	**2019** $350 M **2020** $359 M Funded by contract authority from the Highway Account of the Highway Trust Fund. Funds are subject to the overall Federal-aid obligation limitation. **Apportionment of funds** The FAST Act continues the MAP-21 approach to formula program funding, authorizing a lump sum total instead of individual authorizations for each program. Once each State's combined total apportionment is calculated, funding is set aside for the State's Metropolitan Planning program from: • the State's base apportionment [23 U.S.C. 104(b)(6)]; and • the State's apportionment for the National Highway Freight Program [23 U.S.C. 104(b)(5)(D)]. (See "Apportionment" fact sheet for a description of this calculation.) **Transferability to other Federal-aid apportioned programs** The Fast Act continues to prohibit transfer of Metropolitan Planning Program funds to other apportioned programs. [23 U.S.C. 126(b)(1)] **Federal share** In accordance with 23 U.S.C. 120. (See the "Federal Share" fact sheet for additional detail.) **Except as specified above or below, the FAST Act continues all of the metropolitan planning requirements that were in effect under MAP-21.**
Performance Based Planning	• Metropolitan planning organizations (MPOs) will be required to establish and use a performance-based approach to transportation decision making and development of transportation plans.	

FHWA- Metropolitan Planning Program		
	MAP-21	FAST Act
	• Each MPO will establish performance targets that address the MAP-21 surface transportation performance measures (see: National Goals and Performance Management Measures fact sheet). • The performance targets selected by an MPO will be coordinated with the relevant State to ensure consistency to the maximum extent practicable. • Performance targets selected by an MPO will be coordinated with public transportation providers, to the maximum extent practicable, to ensure consistency with sections 5326(c) and 5329(d) of title 49. • MPOs are required to integrate into the metropolitan transportation planning process other performance-based transportation plans or processes. • The MPOs will establish performance targets not later than 180 days after the date that the relevant State or public transportation provider establishes performance targets. • Within 2 years of enactment of MAP-21, the structure of all MPOs will be required to include officials of public agencies that administer or operate public transportation systems.	
Long Range Transportation Plan (Plan)	• The Plan will include a description of the performance measures and performance targets used in assessing the performance of the transportation system. • The Plan will also include a system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the established performance targets. • MPOs have the option of developing multiple scenarios for consideration during the development of the Plan.	**Support for intercity bus and commuter vanpools** The FAST Act continues to require metropolitan transportation plans and transportation improvement programs (TIPs) to provide for facilities that enable an intermodal transportation system, including pedestrian and bicycle facilities. It adds to this list other facilities that support intercity transportation (including intercity buses, intercity bus facilities, and commuter vanpool providers). The FAST Act also requires that the metropolitan long-range plan include identification of public transportation facilities and intercity bus facilities. [23 U.S.C. 134(c)(2) & (i)(2)] **Scope of planning process** The FAST Act expands the scope of consideration of the metropolitan planning process to include— • improving transportation system resiliency and reliability; • reducing (or mitigating) the stormwater impacts of surface transportation; and

FHWA- Metropolitan Planning Program		
MAP-21		FAST Act
		• enhancing travel and tourism. [23 U.S.C. 134(h)(1)(I) & (J)] **Capital investment and other strategies** The FAST Act continues to require a metropolitan transportation plan to include strategies to meet current and projected transportation infrastructure needs. [23 U.S.C. 134(i)(2)(G)] **Resilience and environmental mitigation activities** The FAST Act expands the focus on the resiliency of the transportation system as well as activities to reduce stormwater runoff from transportation infrastructure. In addition, it newly requires strategies to reduce the vulnerability of existing transportation infrastructure to natural disasters. [23 U.S.C. 134(d)(3) & (i)(2)(G)] **Transportation and transit enhancement activities** The FAST Act continues to require a metropolitan transportation plan to include transportation and transit enhancement activities. When proposing these activities, the plan must now include— • consideration of the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost-effective manner; and • strategies and investments that preserve and enhance intercity bus systems (including those that are privately owned and operated. [23 U.S.C. 134(i)(2)(H)] **Participation by interested parties in the planning process** The FAST Act explicitly adds public ports and certain private providers of transportation, including intercity bus operators and employer-based commuting programs to the list of interested parties that an MPO must provide with reasonable opportunity to comment on the transportation plan. [23 U.S.C. 134(i)(6)(A)]

FHWA- Metropolitan Planning Program		
	MAP-21	FAST Act
Transportation Improvement Program (TIP)	• The TIP will include, to the maximum extent practicable, a description of the anticipated effect of the TIP toward achieving the performance targets established in the Plan, linking investment priorities to those performance targets.	
Key Provisions	Significant continuing provisions include: • The minimum population required for an MPO remains at more than 50,000; Transportation Management Areas (TMAs) are those areas with a population greater than 200,000. • The Plan must be prepared and updated every 4 years (or more frequently if the MPO elects to do so) in nonattainment areas and areas that were nonattainment and are now under a maintenance plan. In other areas, the Plan will be prepared and updated on a 5 year cycle (or more frequently if the MPO elects to do so). • The Plan covers a minimum 20-year planning horizon with air quality conformity and fiscal constraint. • Public involvement remains a hallmark of the metropolitan planning process. • The TIP is to be updated at least once every 4 years and approved by the MPO and Governor. • A congestion management system is required in TMAs and the planning process in TMAs must be certified by the Secretary.	**Selection of MPO officials** The FAST Act clarifies that metropolitan planning organization (MPO) representation is selected by an MPO according to its bylaws/enabling statute. It also changes the selection criteria for MPO officials to— • grant a representative of a transit provider authority equal to that of other MPO officials; and • allow a representative of a transit provider to also represent a local community. [23 U.S.C. 134(d)(3)] **Consultation with other planning officials** The FAST Act continues to encourage MPOs to consult with officials responsible for other types of planning activities. It adds to the list of such activities tourism and the reduction of risk of natural disasters. [23 U.S.C. 134(g)(3)(A)] **Congestion management** The FAST Act adds examples of travel demand reduction strategies for congestion management in a transportation management area (TMA). While retaining the requirement for a congestion management process for MPOs that serve a TMA, the law also allows an MPO that serves a TMA to develop a congestion management plan (distinct from the congestion management process) that will be considered in the MPO's transportation improvement program. Any such plan must include regional goals for reducing peak hour vehicle miles traveled and improving transportation connections must identify existing services and programs that support access to jobs in the region, and must identify proposed projects and programs to reduce congestion and increase job access

FHWA- Metropolitan Planning Program		
MAP-21		FAST Act
		opportunities. The FAST Act specifies certain consultation requirements MPOs must use in developing the plan. [23 U.S.C. 134(k)(3)]
Performance Report	The Secretary is required to submit a report to Congress not later than 5 years after the date of enactment of MAP-21. The report is to evaluate: • The overall effectiveness of performance-based planning as a tool for guiding transportation investments; • The effectiveness of the performance-based planning process for each metropolitan planning organization; • The extent to which MPOs have achieved, or are making substantial progress towards achieving, the performance targets, and whether MPOs are developing meaningful performance targets; and • The technical capacity of MPOs that operate within a metropolitan planning area of less than 200,000, and their ability to carry out the planning requirements.	

Performance Measure Examples

	Plan 2040 Regional Transportation Plan- A Shared Vision for a Sustainable Region, NYMTC	The Atlanta Region's Plan Transportation Element, ARC	Transportation 2040: Toward a Sustainable Transportation System Plan and Update Report, PSRC	Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040, MTC	2040 Fiscally Constrained Regional Transportation Plan (RTP), DRCOG	The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life, SCAG	Moving Forward 2040: Regional Transportation Plan, PPACG
Performance Emphasis Area	**Measure Description**						
Connections / Accessibility		Worker Access to employment centers within 45 minutes by car (index)	Accessibility to transportation choices	Average daily vehicle miles traveled per populated square mile within 1,000 feet of heavily used roadways	Rail transit trips (boarding)	Person delay per capita	Percent of bridges that are not structurally deficient and/or functionally obsolete
		Worker Access to employment centers within 45 minutes by transit (index)	Land use and regional development patterns (as laid out in VISION 2040)		Total transit trips (linked trips)	Person hours of delay by facility type (mixed flow, HOV, arterials)	Planning time index
		Average number of jobs within 45 minutes of home for typical person	Transportation project completion and program implementation status		Person Miles Traveled on transit	Average distance for work and non-work trips	Nonmotorized systems connectivity and accessibility index
		Total number of jobs within 45 minute transit ride from ETAs	Distribution and quantity of designated urban, rural, agriculture, forest, and mineral resource lands		Transit share of all daily trips	Travel time distribution for transit, SOV, and HOV modes for work and non-work trips	Percent of assets at high risk without viable alternative(s)

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Performance Emphasis Area	**Measure Description**						
			Development densities		Transit share of all daily work trips	State Highway System pavement condition*	Number of lane miles per capita
					Share of total population with good transit-job accessibility (2)	Local roads pavement condition*	Percent of roadway miles in good, fair, and poor condition
					Share of population in low-income or minority areas with good transit-job accessibility (2)	Highway non-recurrent delay for mixed flow and HOV lanes	Total number of reveune service miles for transit passenger service
						Mode share for work trips*	Percent transit ridership increase annually over a five year moving average

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Performance Emphasis Area	**Measure Description**						
						Land consumption	Number of projects in urban and urbanizing area
						Share of growth in High Quality Transit Areas (HQTAs)	
Congestion Management	Demand -to-Capacity Ratio (a ratio that reflects the quality of travel of a roadway section)	Total congestion cost per person	Congestion relief and mobility for all transportation modes	Total Person Trip (incl. walk and bicycle trips)	Vehicle Miles Traveled (VMT)	Vehicle Miles Traveled (VMT) per capita*	
	Vehicle Hours of Delay (the sum total of delay experienced by all vehicles on the network)	Commercial vehicle delay cost per mile	Travel mode splits, travel times, delay, traffic volumes, transit boardings, and total and per capita vehicle miles traveled	Average travel time in minutes for non-work-based trips	Per Capita VMT	Transit mode share*	

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Performance Emphasis Area	**Measure Description**						
	Person Hours of Delay (vehicle hours of delay multiplied by the average person occupancy rate per vehicle)	Number of daily reliable trips	Travel times, levels of service, transit congestion, ferry statistics, and park and ride utilization.	Average travel time in minutes for commute trips	Vehicle Hours Traveled	Percent of trips less than 3 miles	
	Lane-Miles of Congestion (length of roadway lanes that functions at less than acceptable speeds during the peak travel hours)	Number of transit trips in PM peak period (index)		Vehicle Trips	Avg. vehicle speed - all day (mph)	Work trip length distribution	
	Average Travel Speed (miles per hour)	Number of transit trips from Equitable Target Areas (index)		Bicycle and Walking Trips	Avg. vehicle speed - peak hours (mph)	Transit trips per capita*	
	Travel Time Index (a ratio of peak period travel time to free-flow travel time)	Average commute travel time in minutes			Person Miles Traveled (no transit)	Variability of travel time for automobiles	

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Performance Emphasis Area	**Measure Description**						
		Highway VMT in PM peak period			Person Hours Traveled (no transit)	Variability of travel time for trucks	
		Average congested speed in (mph)			Percent of VMT in severe congestion	Lost lane miles for highways and percent seat miles utilized for transit	
					Vehicle Hours of Delay	Truck delay by facility type (highways, arterials)	
					Roadways with 3+ hours of severe congestion (lane-miles)	Travel time to work*	

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Performance Emphasis Area	**Measure Description**						
Safety and Health		Percent of all regional crashes on RTP project corridors	Greenhouse gas and other emissions			Collision rates by severity and by mode	Serious injuries and fatalities per VMT
		Percent of RTP projects that intersect with above average crash rate facilities				Criteria pollutants emissions	Change in CO2, CO, Ozone Levels, NOx, VOCs Levels
						Air pollution-related health measures*	Total number of serious injuries and fatalities
						Physical activity-related health measures*	Serious injuries and fatalities per capita

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Performance Emphasis Area	**Measure Description**						
						Mode share of walking and biking*	Percent of alternative fuel vehicles of all registered vehicles
						Mode share of walking and biking	Percent nonmotorized share of all trip
						Daily amount of walking and biking related to work and non-work trips*	
						Asthma incidence	

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Performance Emphasis Area	**Measure Description**						
						Asthma exacerbation	
						Percent of households living <500 feet from high volume roadways	
						Premature deaths due to PM2.5	
						Percent of residents within 1/2 mile walk to parks and open space*	

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Performance Emphasis Area	**Measure Description**						
						Collision rates by severity and by mode	
						Number of acres of parks per 1,000 residents*	
Economy			Public and private expenditures for transportation and regional transportation funding capacity	% of income spent on housing and transportation by low-income households	Population	Benefit/Cost Ratio	Lifecycle benefit/cost ratio
			The extent and application of tolling and user fees	% of rent-burdened households in high-growth areas	Employment	Additional jobs supported by improving competitiveness	Regional per capita income

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Performance Emphasis Area	**Measure Description**						
						Additional jobs supported by transportation investment	Inter-regional freight tons
						Annual household transportation cost	
						Percent of income spent on housing and transportation	
						Cost per capita to preserve regional multimodal transportation system to current state of good repair	

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Performance Emphasis Area	**Measure Description**						
Environment			Greenhouse gas and other emissions- Number of unhealthy/ healthy air days			Criteria pollutant and greenhouse gas emissions	Acres of habitat corridors for threatened, endangered, and imperiled species impacted and not mitigated
			Water quality and impaired waters designations			Ambient air quality conditions	Miles of streams segments that exceed pollution standards
						Energy consumption*	Change in CO2, CO, Ozone Levels, NOx, VOCs Levels
						Water consumption*	Percent of alternative fuel vehicles of all registered vehicles

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Performance Emphasis Area	**Measure Description**						
							Percent nonmotorized share of all trip
							Ratio of acres replaced/purchased for mitigration to acres impacted
Equity				% of income spent on housing and transportation by low-income households		2016 RTP/SCS revenue sources in terms of tax burdens*	Benefits (timing and amount of) accrued by typical citizens in the Pikes Peak region compared to those accrued by protected status
				% of rent-burdened households in high-growth areas		Share of transportation system usage*	Direct impacts to areas

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Performance Emphasis Area	**Measure Description**						
				Average daily vehicle miles traveled per populated square mile within 1,000 feet of heavily used roadways		2016 RTP/SCS investments*	Travel time benefit
				Average travel time in minutes for commute trips		Distribution of travel time savings and travel distance reductions*	Indirect impacts to areas
				Average travel time in minutes for non-work-based trips		Geographic distribution of transportation investments	
						Jobs-housing imbalance*	

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Performance Emphasis Area	Measure Description						
						Accessibility to employment and services*	
						Accessibility to parks and natual lands*	
						Gentrification and displacement*	
						Emissions impact analysis*	

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Performance Emphasis Area	Measure Description						
						Air quality impacts along freeways and highly traveled corridors*	
						Aviation noise impacts*	
						Roadway noise impacts*	
						Active transportation hazards	

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Performance Emphasis Area	**Measure Description**						
						Rail-related impacts*	
						Public health impacts	
						Climate vulnerability	
						Proposed Mileage-Based User Fee (MBUF) impacts*	

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APPENDIX 2

CHAPTER HIGHLIGHTS:

- **LONG RANGE TRANSPORTATION PLAN REVIEWS**

Addressing Compliance of the 2045 LRTP with Federal, State, Regional, and Local Requirements
Long Range Transportation Plan Review Matrix

Yellow boxes depict Key items of note

Criteria		F	S	R/L	Plan 2040: Regional Transportation Plan- A Shared Vision for a Sustainable Region, NYMTC	The Atlanta Region's Plan Transportation Element, ARC	Transportation 2040: Toward a Sustainable Transportation System Plan and Update Report, PSRC	Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040, MTC	2040 Fiscally Constrained Regional Transportation Plan (RTP), DRCOG	The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life, SCAG	Moving Forward 2040: Regional Transportation Plan, PPACG (Financial Section)
Are the Federal Planning Factors addressed in the Plan?	Support Economic Vitality	X			• In the Plan, the list of Federal Planning Factors is included (Chapter 1, page 29). Consistent with federal law under MAP-21 when the Plan was adopted, eight planning factors were considered. Since the Plan's adoption federal law under the Fixing America's Transportation (FAST) Act added two additional Planning Factors. • To promote economic vitality, the Plan identified several goal areas that are related. "Improve the regional economy" and "Build the case for obtaining resources to implement regional investments," are shared goals of the Plan (Chapter 1, page 6), and are priorities in the NYMTC region. There are seven shared goal areas in the Plan: (1) "Enhance the regional environment, (2) Improve the regional economy, (3) Improve the regional quality of life, (4) Provide a convenient and flexible transportation system within the region, (5) Enhance the safety and security of the transportation system for all users, (6) Build the case for obtaining resources to implement regional investments, (7) Improve the resiliency of the regional transportation system," (Chapter 1, page 6). • In addition, the Plan identifies strategies to ensure availability of financing to fund projects. Strategies include: "Public-Private Partnerships, Tax Increment Financing, Debt Financing, and Supplemental Federal Funding," (Chapter 6,	• The Plan identifies all of the Federal Planning Factors including the two additional factors that were added under the FAST Act, in Table 1-2, page 14. The text also identifies where the various legislative requirements are addressed in the Plan (page 14-15). • To promote economic vitality, the Plan incorporates economic growth into the vision and objectives of the Plan. "Building A Competitive Economy" has been identified as part of the three-part vision on page 44 that consists of: "providing world-class infrastructure, building a competitive economy, and ensuring the Region is comprised of healthy and livable communities." • One of the objectives of the Plan is to improve transit and non-SOV options as a way to increase economic competitiveness while reducing environmental impacts. (page 47).	• In the Plan, the first 8 Federal Planning Factors that were identified before the FAST Act are on page 3 of the Transportation 2040 Plan. The Planning Factors are not listed in the Transportation 2040 Update Report. • To promote economic vitality, "The Regional Economic Strategy serves as the economic functional Plan of VISION 2040, the long-range environmental, growth management, economic development, and transportation strategy for the Puget Sound Region The Regional Economic Strategy takes a two-pronged approach to supporting the region's economy: (1) Cluster Initiatives: Specific action initiatives were identified to grow and sustain our region's leading industry clusters- geographically concentrated groupings of competing and complementary industries that create wealth in a region by selling products or services to outside markets, thereby generating income that fuels the rest of the economy. The Strategy focuses on seven of our region's leading industry clusters: aerospace, clean technology, information technology, life sciences, logistics and international trade, military, and tourism. (2) Foundation Initiatives: Initiatives were also developed to rebuild the fundamental economic foundations that support our region's leading industry clusters: education, technology commercialization, new and small business support, tax	• In the Plan, the Federal Planning Factors are not specifically mentioned, but the topics covered by them are included in the San Francisco Plan. Economic vitality is important to the San Francisco Bay region. Table 4 shows Economic Vitality incorporated into Target 8 of the Plan (page 19). Target 8, which is "increase gross regional product (GRP) by 110 percent- an average annual growth rate of approximately 2 percent (in current dollars)," and is also listed on page 105. Past long-range transportation plans have not included an analysis of economic impacts that includes an estimated quantitative calculation of the benefits of projects during plan development. Plan Bay Area moves forward to directly address this issue through development of a quantitative performance target, (page 105). • " The Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) are currently undertaking a three-year initiative — the Bay Area Regional Prosperity Plan — which is intended to identify strategies to improve the region's economic prosperity by encouraging stronger, more sustainable communities, integrating housing and jobs planning, fostering local innovation in support of new jobs, and building a healthy regional economy for all. Over $2 million in grants will be awarded to pilot projects to expand economic opportunities for low- and moderate-income workers and improve housing affordability	• In the Plan, the eight Federal Planning Factors established before the FAST Act are mentioned in Chapter 1, page 4. It does not include the two new factors established under the FAST Act. There is a section in the appendix (Appendix 6, page 1) that identifies how each planning factor has been addressed in the Plan: "**Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.** The plans provide a network of transportation facilities and connections to link employment centers with major multimodal passenger facilities and intermodal freight terminals, both nationally and internationally. The plans specifically address connections with Denver International Airport, which provides a direct linkage between the region's economy and the global economy. Connections with the region's other general aviation airports to facilitate business travel are also emphasized. The provision of an extensive transit system enables a greater share of the labor force to have access to many more jobs." (Appendix 6) • Federal Planning Emphasis Areas are also mentioned on page 4.	• In the Plan, the Federal Planning Factors are not mentioned, however, it does state that the Southern California Association of Governments (SCAG) continued to monitor the rule making process after plan adoption to ensure that the region was compliant with requirements outlined in MAP-21. In addition, the Plan also mentions the FAST Act, which SCAG will also continue to monitor to ensure it is incorporated into the implementation process. • The Plan identifies several strategies and themes that have helped to define its vision. One of these themes is "'Supporting commerce, economic growth and opportunity.' The Plan supports economic growth by building the infrastructure the region needs to promote the smooth flow of goods and easier access to jobs, services, educational facilities, healthcare and more. The Plan also preserves natural lands, improves air quality and creates vibrant urban centers—all of which are critical for attracting and retaining the people and jobs Southern California needs to thrive," (page 14). • In addition the Plan includes goals that directly relate to encouraging economic vitality. "Align the Plan investments and policies with improving regional economic development and competitiveness," is an identified plan goal on page 64. • Regional economic models known as REMI TranSight models were used to quantify	• Not Reviewed

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					page 18). To forecast growth, "four key socioeconomic and demographic measures were used: population, employment, labor force, and households," (Chapter 2, page 5).		structure, social capital and quality of life, and transportation," (Transportation 2040 Plan, page 13). • The Transportation 2040 Update Report includes changes to the "Transportation 2040 Regional Economic Strategy to reflect the effects of the economic downturn and reduction of transportation revenues," (Transportation 2040 Update Report, page 6).	near transit. The three-pronged planning effort includes the Economic Opportunity Strategy, a Housing the Workforce Initiative and an Equity Collaborative that together will implement this program. Recommended strategies from this effort will be considered by the MTC and ABAG in implementing Plan Bay Area and as input to the update of the Plan," (page 118).		the economic impact of the implementation of the Plan to promote regional economic vitality. "It combines input-output approaches, coupled with a model of resident and firm migration into and out of our region to model the direct, indirect and induced effects of the 2016 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) spending," (Page 146).	

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Are the Federal Planning Factors addressed in the Plan?	Increase the safety of the transportation system	X			• In the Plan "Enhance the safety and security of the transportation system for all users," is a shared goal area in Chapter 1 page 6 (in that safety and security are combined as a unified goal). Safety and security is identified as a priority in the New York Metropolitan Transportation Council (NYMTC) region. • Transportation Safety is also addressed in Chapter 4 on page 27. The chapter covers the evaluation of safety data and identified trends in the region, as well as various safety initiatives with a focus on "priority areas" which are safety issues that have been identified for monitoring, and strategies for doing so. • In addition, several goals and objectives have been identified in the Plan that relate to safety. For example, "Improve Pedestrian and Bicycle Safety" is identified as an "objective for regional pedestrian and bicycle improvements" in Appendix 2. It discusses the safety data trends and identifies "contributing factors to pedestrian and bicycle fatalities," (Appendix 2, page 20). • Safety trends/data and fatality rates are being used as a measure to determine success of safety programs and projects (Appendix 2, page 20).	• In the Atlanta Regional Commission (ARC) region, safety has been identified as a priority through several trends and objectives of the Plan. For example, "the Region must protect and improve the health and safety of all of our residents," is identified as a trend in the region on page 40; while "provide for a safe and secure transportation system," is an objective of the Plan (page 47). • The Plan includes a "Solutions" section which includes a review of projects that are planned to ease travel for each mode (page 126).	• In the Plan, creation of "a safe transportation network" has been identified as a priority of the region on page 56, and this priority is further reinforced in the Transportation 2040 Update Report on page 66.	• In the Plan, Target 4 of is to "Reduce by 50 percent the number of Injuries and fatalities from all collisions (including bike and pedestrian)" on page 101. It was adopted from the Strategic Highway Safety Plan, and reflects the fact that safety has been identified as a regional priority. • The region has shown a commitment and has dedicated funding to improving safety of bicyclists and pedestrians, including local sales tax funds, grant funds, and other funding sources (page 75).	• In the Plan, safety is listed on page 20: "Denver Regional Council of Governments (DRCOG), the California Department of Transportation (CDOT), and local governments routinely analyze annual crash data to identify roadways and intersections with a high number or rate of crashes. Stand-alone safety projects are then identified and implemented, with many physical safety improvements built as a component of a larger project. Safety elements of candidate projects and existing facility crash rates are also prioritized during the development of TIPs,"(page 20-21). •The planning factor is also listed in Appendix 6, page 1: "**Increase the safety of the transportation system for motorized and nonnotarized users.** The 2040 RTP addresses several aspects of safety such as law enforcement and legislative actions, safety improvements to be made, maintenance activities related to safety, and the relationship to the state's Strategic Highway Safety Plan, Strategic Plan for Improving Roadway Safety. Policies and action strategies related to all modes of travel are identified. While site-specific safety designated improvements, because of their relatively small scale, are not specifically listed or mapped, safety will be given due consideration through UPWP planning activities, TIP project selection criteria, future RTP system improvement evaluations, and the incorporation of safety elements into larger scale projects. The 2040 RTP identifies funding	• Ensuring the safety and security of the transportation network for residents and visitors is reflected in the goals, objectives, and strategies of the SCAG Plan. It is a priority identified on page 87, and is a goal identified on page 64. "Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies," is an identified goal area on page 64. • "SCAG continues to pursue the following strategies toward ensuring safety and security: (1) Ensure transportation safety, security and reliability for all people and goods throughout the region. (2) Prevent, protect, respond to and recover from major human-caused or natural events in order to minimize the threat and impact to lives, property, the transportation network and the regional economy. (3) Provide a policy forum to help develop regional consensus and education on security policies and emergency responses. (4) Assist in expediting the planning and programming of transportation infrastructure repairs from major disasters. (5) Encourage the integration of transportation security measures into transportation projects early in the development process by leveraging SCAG's relevant plans, programs and processes (including regional Intelligent Transportation Systems (ITS) architecture)," (page 89). • The Plan also includes a "Transportation Safety &	• Not Reviewed

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									commitments to future identified safety projects, strategies, and services."	Security" section in the Appendix.	

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Are the Federal Planning Factors addressed in the Plan?	**Increase the security of the transportation system**	**X**			•In the Plan, "Enhance the safety and security of the transportation system for all users," is a shared goal area in Chapter 1 page 6 (in that safety and security are combined as a unified goal). Safety and security is identified as a priority in the NYMTC region. • In addition, Transportation Security is also addressed in a separate section in Chapter 4, page 36 at the Federal, State, and Regional Levels. It identifies infrastructure hardening measures that the region is incorporating by jurisdiction and by agency.	• In the Plan, "Provide a safe and secure transportation system," has been identified as an objective on page 47.	• In the Plan, security is mentioned in the Transportation 2040 Plan on page 57 as a priority in the region, but is not referenced in the Transportation 2040 Update Report.	• In the Plan, security was not mentioned.	• In the Plan, "Security is listed on page 21: In this region, security is included in emergency management planning, which is coordinated by the public safety community. DRCOG actively participates in the North Central All-Hazards Emergency Management Region (NCR) and the Denver Urban Area Security Initiative (UASI) to address regional transportation security issues," (page 21). • The planning factor is also listed in Appendix 6, page 2: "**Increase the security of the transportation system for motorized and nonmotorized users.** Residents and visitors will travel in the Denver region with confidence. Appropriate action strategies are identified that require substantial coordination among all the agencies charged with transportation system security. Activities that facilitate preparedness and prevention, such as vulnerability assessments, are key to increasing security, but attention will also be paid to improving response and recovery."	• As mentioned above, safety and security is identified as a main priority of the Plan. In the "Transportation Safety and Security" Appendix, SCAG identifies major transportation assets that could be threatened by natural or man-made disasters. While SCAG cannot play a direct role in responding to an emergency, the MPO has identified their potential role in increasing the security of the transportation system. Items they have identified include: "(1) Providing a policy forum to help develop regional consensus and education on security policies and emergency responses. (2) Assisting in expediting the planning and programming of transportation infrastructure repairs from major disasters. (3) Leveraging projects and planning functions (including ITS) that can enhance or provide benefits to transportation security efforts and those responsible for planning and responding to emergencies. a. Integrating security into the regional ITS architecture. b. Becoming a central repository/mirror for regional geo-data that can be used for planning, training, response and relief efforts of law enforcement personnel and emergency responders," (Transportation Safety and Security Appendix, page 22).	• Not Reviewed

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Are the Federal Planning Factors addressed in the Plan?	Increase the accessibility and mobility for people and freight	X		X	• In the Plan, "Provide a convenient and flexible transportation system within the region," is a shared goal area in Chapter 1 page 6 (in that accessibility and mobility are combined as a unified goal). • The NYMTC planning area is one of the largest freight hubs in the northeast region. The New York City Department of Transportation has incorporated two different programs to aid in alleviating traffic caused by freight movement. These programs are known as Delivery Windows and NYC deliverEASE. The Delivery Windows provide a “delivery window” of time during peak hours in the morning for trucks to deliver freight to unloading zones. During the rest of the day, the unloading zones are available to other vehicles for parking. NYC deliverEASE is a USDOT funded pilot program aimed at promoting delivery of freight during off-peak hours.	• In the Plan, "Support the reliable movement of freight and goods," is identified as an objective of the Plan on page 47. • The Plan includes a "Solutions" section which includes a review of projects that are planned to ease travel for each mode. "Roadway Solutions for Drivers and Bus Drivers," and "Solutions for Transit Patrons" are discussed on pages 86 and 108. These solutions include updating and expanding transit infrastructure and expanding capacity. Mobility Management / Paratransit is identified as a solution for those with specialized needs on page 137. • Keeping goods moving for air, freight, and rail modes is addressed in the "Regional Freight Mobility Plan" on page 66. To develop a more efficient freight network, "the ARC developed the Atlanta Strategic Truck Route Master Plan (ASTRoMaP). This project, in cooperation with state and local government bodies and agencies, produced a truck route system designed to provide regional access that will also guide current and future decision making on regional transportation priorities."	• In the Plan, land use patterns have been developed with a focus on mobility. Chapter 2 of the Transportation 2040 Plan outline's the region’s “Strategic Approach to Regional Mobility." It highlights the congestion management process as one that encourages sustainable mobility through strategic land use planning and system management. In addition, the section focuses on improving mobility and accessibility for people with special needs through fixed route transit and demand response/paratransit services. Finally, the section covers freight mobility, with a focus on easing freight congestion in the region (Transportation 2040 Plan, Page 19-26). Due to a shifting economic climate, the Transportation 2040 Update Report includes the response of the transit agencies to financial changes (Transportation 2040 Plan, page 19). • A new "Rural Transportation Study" has been included as part of the Transportation 2040 Update Report and has been listed in Appendix R. It examines the rural transit system beyond the urban growth boundary to better serve residents.	• In the Plan, there are two programs that provide funding for projects that increase the mobility and accessibility of low income and disabled populations. These programs are the "Lifeline and Elderly and Disabled Programs," which are outlined on page 7-8. • "An area of possible focus for the future is “mobility management,” a strategic approach to connecting people to transportation resources within a community including services provided by human services agencies and other community sponsors. This strategy is especially key to the region’s ability to address growth in the Bay Area’s senior population and persons with disabilities. Through partnerships with many transportation service providers, mobility management enables communities to monitor transportation needs and links individuals to travel options that meet their specific needs, are appropriate for their situation and trip, and are cost efficient." (page 72). • Land use patterns and the efficiency of the transportation system are identified as impacts on freight mobility on page. 105.	• In the Plan, accessibility and mobility is an identified priority. "**Increase accessibility and mobility of people and for freight.** A key goal of the 2040 RTP is to provide improved mobility for the region’s citizens and businesses. Both roadway and transit improvements are identified and funded in the 2040 RTP that reduce delay and enhance mobility. The Plan also includes a number of alternative modes of transportation to provide travel choices. Future funds are allocated for the promotion of alternative modes on three levels: regionally, in subareas, and at individual business sites. Pedestrian and senior citizen accessibility strategies are strongly referenced. Mobility of freight movements is specifically addressed. Management activities to improve freight mobility include incident detection and response, and Intelligent Transportation Systems applications. The Plan identifies pools of funding that can be used for all of the previously mentioned activities. However, the amount of funding available for the Plan is insufficient to maintain or improve congestion levels; delays will increase without additional funding," (Appendix 6, page 2).	• In the Plan, "Maximizing mobility and accessibility for all people and goods in the region," is an identified 2016 RTP/SCS goal on page 64. • "At the beginning of Chapter 1, there are several themes that resonate throughout the 2016 RTP/SCS. The first of these is: 'Integrating strategies for land use and transportation.' This is SCAG’s overarching strategy for achieving its goals of regional economic development, maximized mobility and accessibility for all people and goods in our region, safe and reliable travel, a sustainable regional transportation system, a protected natural environment, health for our residents, and more," (Page 73). • Through land use strategies that increase mobility, such as "developing 'Complete Communities,'" "neighborhood mobility areas," and transit-oriented development, the region hopes to promote accessibility and mobility. (Page 73-83).	• Not Reviewed

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Are the Federal Planning Factors addressed in the Plan?	Protect and enhance the environment, promote energy conservation improve quality of life, and promote consistency between transportation improvements	X			•In the Plan, environmental protection is identified as a priority through shared goal areas of: enhance the regional environment, improve the regional quality of life, and improve the resiliency of the regional transportation system in Chapter 1 page 6. • Chapter 2 talks about how an improved environment and an expanding transportation network can accommodate an increasing population to improve quality of life, (Chapter 2, page 6). • Chapter 2 "discusses the challenges posed by climate change which include rising sea levels, heat waves, and more frequent and intense storms. This chapter identifies strategies and initiatives such as New York's State Climate Action Council that will protect transportation assets from extreme weather events and help reduce the region's contribution to greenhouse gas emissions," which can be used as measures for environmental impact, (Chapter 2, page 6).	• In the Plan, environmental projection is reflected in the objectives and implementation of an ecological approach launched by the FHWA. "Improve transit and non-SOV options to boost economic competitiveness and reduce environmental impacts," has been identified as an objective of the Plan on page 47. "For the Atlanta Region, the following planning initiatives are considered to be an integral part towards implementing the Eco-Logical Approach: (1) Regional Ecosystem Framework Development and Analysis; (2) Streamlining NEPA (National Environmental Protection Act) and Accelerating Project Delivery; (3) Updating the Metropolitan North Georgia Water District Plan and Corresponding Green Infrastructure Strategies; and (4) Development of a Transportation System Preparedness and Resilience Plan." (page 58).	• Chapter 3 of the Transportation 2040 Plan, entitled, "A Sustainable Environment," includes 3 strategies to promoting environmental protection: "maintain and improve air quality, reduce greenhouse gas emissions, improve water quality, and improve and promote health," (page 38). • The region developed an Environmental Impact Statement for the Transportation 2040 Plan that "contained information that allowed regional decision-makers to craft a transportation Plan that addresses critical regional policy objectives, including improved air quality, reduced greenhouse gases, improved water quality, public health and mobility, and support for the VISION 2040 Regional Growth Strategy. The EIS identifies specific potential measures to mitigate impacts associated with the implementation of Transportation 2040,"(Transportation 2040 Plan, page 32).	• In the Plan, there are various strategies related to environmental protection. To control growth, Priority Development Areas (PDAs) and Priority Conservation Areas (PCAs) were created. Job and population growth is encouraged in PDAs and discouraged in PCAs. PDAs are identified as areas that already have some type of transportation investment. The objective is to developing in PDAs instead of PCAs so that the region doesn't need to develop on open spaces or in places that over-utilize our water supply, energy resources and road capacity. This takes pressure off development of open space and agricultural land (page 42, 16).	• In the Plan, environmental protection is reflected in a host of initiatives. "**Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.** All of these concepts are part of the Metro Vision planning process, of which the 2040 RTP and 2035 MVRTP are a part," (Appendix 6, page 2). • "*Protecting and enhancing the environment* is a key policy for the 2040 RTP. The planning process provided for the active involvement of the air quality regulatory agencies and citizens interested in air quality. The 2040 RTP is in conformance with the State Implementation Plan for air quality. Projects identified for inclusion in the transit and highway networks both are considered with respect to environmental impact at the system level. DRCOG participated in CDOT's Planning Insight Network (PIN) Tool process, an interactive web-based mapping tool and process to solicit environmental consultation by resource agencies on major projects and travel corridors. DRCOG submitted a representative list of major freeway and arterial roadway capacity projects to CDOT for it to map in the PIN Tool for consultation and comment by resource agencies. DRCOG reviewed and considered the comments received," (Appendix 6, page 2-3). • "*Energy conservation* is promoted through Metro Vision land use/development	• The SCAG has identified environmental quality as a priority in the region through several goals in the Plan. "Protect the environment and health of our residents by improving air quality and encouraging active transportation (e.g., bicycling and walking)," and "Actively encourage and create incentives for energy efficiency, where possible," are identified goals on page 64. • Improving public health through environmental protection and improving quality of life is also an identified propriety in the theme: "Promoting the links among public health, environmental protection and economic opportunity,"(page 14). "The Plan places a priority on implementing the integration of transportation and land use strategies to improve our overall health. The Plan will result in improved air quality, provide more opportunities for people to be physically active, and protect natural lands and habitats. The result: communities will become healthier places to live, allowing people and businesses to thrive," (page 14).	• Not Reviewed

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									policies and by attempting to minimize travel delays and provide extensive transit services and other alternative modes of travel through the 2040 RTP. Metro Vision policies such as extent of urban growth (urban growth boundaries), urban centers, and community design seek to focus on more dense, pedestrian and transit-friendly development. The promotion and facilitation of alternative travel modes is acknowledged through the travel demand management (TDM) programs, such as DRCOG's Way to Go program, funded in the 2040 RTP. In addition, as one of its policy-based activities, the synchronization of traffic signals across the region is supported. Petroleum fuel consumption and greenhouse gas emissions are reported in the 2040 RTP," (Appendix 6, page 3). •"Several policies, action strategies and funded improvements included in the Plan will i*mprove the quality of life* for persons living throughout the region. A key principle of the Metro Vision Plan is to "protect and enhance the region's quality of life", and the elements and policies of Metro Vision and the 2040 RTP are directed toward that principle. For example, environmental justice for disadvantaged persons will be enhanced by the implementation of the regional transit system, alternative mode services and facilities, and environmentally sensitive designs that are developed for specific projects. Metro Vision explicitly considered State and local planned growth and economic development patterns through extensive outreach to local governments		

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									and economic development organizations," (Appendix 6, page 3).		

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Are the Federal Planning Factors addressed in the Plan?	Enhance the integration and connectivity of the transportation system	X			• Supporting regional connectivity has been incorporated into a goal area of the Plan. "Provide a convenient and flexible transportation system within the region," is shared goal area in Chapter 1 page 6. • Chapter 2 "identifies increased gridlock and travel times as a regional challenge and one that Plan 2040 seeks to address. This challenge will necessitate strengthening existing infrastructure and expanding transportation options with a range of projects discussed in Plan 2040," (Chapter 2, page 6).	• The Atlanta region recognizes the need for an increasingly interconnected transportation system. "Support the reliable movement of freight and goods," is identified as an objective of the Plan on page 47. •To further promote connectivity of the system, "Regional Transportation Systems" have been identified as key networks to focus on: "1. Regional Strategic Transportation System (RSTS) 2. Regional Thoroughfare Network (RTN) 3. Regional Truck Route Network 4. Regional Transit Vision," (page 62).	•In the Plan, connectivity is a priority. Chapter 2 of the original Puget Sound Regional Council (PSRC) Plan outlines the region's "Strategic Approach to Regional Mobility." In this Chapter, the Plan has identified a strategy for relieving congestion which consists of a combination of "(1) land use planning, (2) managing system demand, (3) Transportation System Management and Operations, and (4) strategically adding capacity to the system," (page 19). In addition to addressing congestion management, the Plan identifies other components to improving mobility. Through the incorporation of various transit systems to aid those with special needs and use of the Regional Freight Strategy, the region makes positive steps toward improving mobility (Transportation 2040 Plan, page 19). • Appendix K of the Transportation 2040 Plan includes a Coordinated Transit-Human Services Transportation Plan. • A new "Rural Transportation Study" has been included as part of the Transportation 2040 Update Report and has been listed in Appendix R. The purpose of the study is to identify transportation needs beyond the city's urban growth boundary. "The study examines opportunities for the region to maintain, preserve, and enhance the regional transportation system that serves rural areas outside the contiguous urban growth boundary in ways that are consistent with the goals and policies of VISION 2040," (	• To address regional connectivity, Plan Bay Area has developed a strategic approach to focusing growth in certain regions. These are areas that already have transportation infrastructure in place, or can easily be connected to the regional network. "The Plan's land use pattern seeks to achieve four comprehensive objectives: 1. Create a network of Complete Communities, 2. Increase the Accessibility, Affordability and Diversity of Housing, 3. Create Jobs to Maintain and Expand a Prosperous and Equitable Regional Economy, 4. Protect the Region's Unique Natural Environment," (page. 42). • The Plan's preferred scenario has identified the need to dedicate 87 percent of its funding to the existing transportation network maintenance and operations. The rest of the funding is " to next-generation transit projects and other high-performing projects; to programs aimed at supporting focused growth and reducing GHG emissions; and to county-level agencies for locally designated priorities," (page 26).	• In the DRCOG region, connectivity is addressed in several ways. "**Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.** The 2040 RTP specifically addresses the integration of transportation system elements. The Plan discusses multimodal connections with respect to a number of modes, as well as shared opportunities for multimodal transportation development. For example, park-n-Ride lots will have convenient auto, pedestrian and bicycle connections. Transit-to-transit transfer facilities are identified as well as transit and aviation connections. The key multimodal passenger facilities identified in the 2040 RTP are Denver Union Station and Denver International Airport. Roadway improvements near major intermodal freight facilities are included and reference is provided to new or improved intermodal freight facilities that are envisioned." (Appendix 6, page4).	•In the Plan, "Maximize mobility and accessibility for all people and goods in the region," is an identified goal area on page 64. Goods movement is addressed on page 33-36. • "Giving people more transportation choices," is an identified theme in the Plan. "The Plan will provide people with more options for transportation and mobility, offering them various alternatives to driving alone. This will be accomplished by enhancing public transit capacity and increasing its viability by making it more accessible; completing critical road connections; providing greater opportunities for biking and walking, particularly for short trips; exploring how people might use alternative fuel vehicles within their neighborhoods and beyond; increasing telecommuting and flexible work schedules; encouraging new mobility innovations; and improving safety. These Transportation Demand Management, or TDM, strategies will help us better manage the demand we place on the roadway network by reducing the number of people who drive alone and encouraging them to use alternative modes of travel," (page 14).	• Not Reviewed

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							Transportation 2040 Update Report, page 2).				

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Are the Federal Planning Factors addressed in the Plan?	**Promote efficient system management and operation**	**X**			• In the Plan efficiency is promoted through Transportation System Management and Operations (TSM&O) initiatives. TSM&O is discussed in Chapter 4, with a review of the system and demand management, congestion mitigation process (CMP), transportation safety, and transportation security, (Chapter 4, page 131). • Performance measures are used in the CMP to assess the effectiveness and efficiency of the roadway system. "When measuring congestion, it is important to consider several performance measures that assist in quantifying and providing an overview of the level of congestion." Some of the most commonly used measures are: "Demand-to-Capacity Ratio, Vehicle Hours of Delay, Person Hours of Delay, Average Travel Speed, Lane-Miles of Congestion, and Travel Time Index," (Chapter 4, page 25).	• In the "Solutions" section of the Plan, Transportation System Management and Operations (TSM&O) is discussed on pages 88-91. It has been identified as a solution to "anticipate and manage traffic congestion, and minimize other unpredictable causes of service disruption and delay, thereby maintaining roadway capacity while improving reliability and safety," (page 88).	• Transportation System Management and Operations (TSM&O) is included under "Regional Programs and Projects" in Chapter 5 of the Transportation 2040 Plan. The new updated report includes a "Transportation Demand Management Action Plan" under Appendix T. The goals of the Plan are to: "(1) Provide a better understanding of TDM and its value by highlighting key activities in the region (2) Describe the strategic priorities that TDM implementers across the region continue to pursue (3) Recommend implementation actions for the Puget Sound Regional Council (PSRC) and the region's TDM Steering Committee to support and augment the work happening at the local level," (Transportation 2040 Plan, Appendix T, page 3).	• In the Plan, efficiency is addressed in Table 4, where Performance Targets 9 and 10 relate to "Transportation System Effectiveness," (page 19). Performance Target 9 is: "Increase non-auto mode share by 10 percentage points (to 26 percent of trips)," and "Decrease automobile vehicle miles traveled per capita by 10 percent." Target 10 is: "Maintain the transportation system in a state of good repair: (1) increase local road pavement condition index (PCI) to 75 or better, (2) decrease distressed lane-miles of state highways to less than 10 percent of total lane-miles, and (3) reduce share of transit assets past their useful life to 0 percent (Note: Baseline year is 2012)," (page 19). • The "Transportation System Effectiveness" Target is further explored on page 106. • "Plan Bay Area includes a discretionary funding commitment of $3.9 billion over the next 28 years to support projects and programs that will boost system efficiency. These include the Freeway Performance Initiative (FPI) and the Transit Performance Initiative (TPI) that aim to use low-cost technology upgrades to dramatically improve the speed and reliability of roadways and transit service. In addition, efforts like San Francisco's cordon pricing program and the Regional Express Lane Network will leverage revenues generated from pricing to improve the efficiency of the existing system while expanding travel choice," (page 81).	• In the Plan, promotion of an efficient system is reflected through various components. **"Promote efficient system management and operation.** The 2040 RTP makes extensive reference to system management and operational activities. The 2040 RTP identifies and funds operational improvements, facility management, traveler and transit information systems, and travel demand modification efforts to ensure that the regional transportation system will work as efficiently as possible. ITS efforts will provide transportation efficiency benefits, as well as safety and security enhancements." (Appendix 6, page 4).	• In the Plan, "Maximize the productivity of our transportation system" is an identified goal area on page 64. "Working to make sure our existing transportation system is operating at maximum efficiency is a leading regional priority," (page 84). • The Plan includes a "System Management Pyramid" which reflects the region's approach to transportation system management. It includes "system completion and expansion, operational improvements, ITS traveler information/traffic control incident management, smart land use demand management/value pricing, maintenance and preservation, and system monitoring and evaluation," as key components of the system that require investment to maintain efficiency (page 85).	• Not Reviewed

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Are the Federal Planning Factors addressed in the Plan?	Enhance Travel and Tourism	X			• In the Plan under the goal of "Improve the regional quality of life," several desired outcomes have been identified, including "increase intra-regional mobility and accessibility for commuting, recreation and tourism," (Chapter 1, page 8).	• In the Plan, enhancing travel and tourism is discussed as a planning factor on page 14, and page 38. Because the Plan was semi-updated in 2016, the new Federal Planning Factors under the FAST Act were added.	• Tourism has been identified as part of the "Regional Economic Strategy" on page 13 in the Transportation 2040 Plan. It is identified as one of the seven leading industry clusters: "aerospace, clean technology, information technology, life sciences, logistics and international trade, military, and tourism," (Transportation 2040 Plan, page 13). It not expressly referenced in the Transportation 2040 Update Report.	• Not expressly mentioned.	• Not expressly mentioned.	•In the Plan, creating a safe and secure transportation system for residents and visitors is mentioned on page 87.	• Not expressly mentioned.
Are the Federal Planning Factors addressed in the Plan?	Emphasize the preservation of the existing transportation system	X			• In the Plan, projects are categorized based on their contribution to "preserving, enhancing and growing the transportation system," (Chapter 5, page 6). Projects have been divided out, and types of projects that preserve the system include: bridge replacements and rehabilitation, interchange reconstruction, and terminal upgrades. Types of projects that enhance and grow the system include: bridge replacements, bus rapid transit projects, ramp reconstruction, Subway enhancements and station expansion, and High-Occupancy Vehicle/Transportation Demand Management Projects.	• "The Atlanta Region's Plan Transportation Element places continued emphasis on supporting roadway and transit preservation. The Plan assumes that existing core transit services for MARTA and other transit systems will be maintained by meeting core funding needs. Over the past two years, regional transit operators have implemented cost efficiencies, including major service reductions. These actions have reduced operating costs, leading to a more sustainable financial structure." This is identified as a priority on page 108. • "Maintaining and operating the existing transportation system to provide for reliable travel," is an identified objective on page 47.	• One of the goals under the freight mobility section of the PSRC Transportation 2040 Plan is to "preserve and maintain the region's existing multimodal freight transportation system to increase reliability and efficiency and to prevent degradation of freight mobility," on page 26. In the Transportation 2040 Update Report, it states that keeping the transportation system in a "State of Good Repair" is the highest priority in the 2040 Plan. The Transportation 2040 Plan used an approach that calculated future cost estimates of maintenance and preservation projects based on pavement condition scores and standard project costs, rather than historic trends. This allowed for a more realistic cost estimate for future needs, (Transportation 2040 Plan, Appendix S, page 2). • A "State of Good Repair" section has been added as Appendix S of the Plan under the new update, which includes a description of the revised cost estimate approach listed above, as well as a review of items that were identified by a State of Good Repair Subcommittee as focus	• In the Plan, system preservation is reflected through performance targets. Target 10 is: "Maintain the transportation system in a state of good repair: (1) increase local road pavement condition index (PCI) to 75 or better, (2) decrease distressed lane-miles of state highways to less than 10 percent of total lane-miles, and (3) reduce share of transit assets past their useful life to 0 percent (Note: Baseline year is 2012)," (Table 4 page 19). An evaluation of the target can be found on page 106. • "Plan Bay Area continues to support the 'fix it first' emphasis from 2009's Transportation 2035 Plan to ensure that the region directs a majority of funding to maintain existing transportation assets," - (Page. 69, Page. 132).	• In the Plan, system preservation is also reflected. **"Emphasize the preservation of the existing transportation system.** Preservation of the existing transportation system is an important policy of the 2040 RTP. A discussion of the need to maintain and preserve the existing transportation system is provided. The 2040 RTP contains funding for maintenance and preservation activities in addition to the physical expansion of the transportation system. Preservation is applied to all types of travel mode facilities on the system, from roadways to transit stations to sidewalks. However, reasonably expected funding over the life of the 2040 RTP may be insufficient to preserve the existing transportation system to the desired level of quality." (Appendix 6, page 4).	• In the SCAG region, system preservation has been identified as one of the chief priorities. "Protecting the region's previous investments and getting the most out of every component is the highest priority for the region," (page 84). • "Preserve and ensure a sustainable regional transportation system," is an identified goal on page 64. • "Protecting and preserving our existing transportation infrastructure," is an identified theme in the Plan. "The Plan places a priority on investing in the transportation system we already have, to maintain and extend its life and utility. It recognizes that deferring maintenance of infrastructure leads to costlier repairs in the future, "(page 14).	• Not Reviewed

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							areas for maintaining the system: "Storm water Drainage, Pavement Preservation, Local Signal Operations and ITS," (Transportation 2040 Update Report, Appendix S, page 6).				

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Sustainability	Climate Change/Greenhouse Gas Mitigation	X		X	• Separate from resiliency efforts, two approaches have been identified to mitigate climate change in the NYMTC Plan: "(1) the use of cleaner sources of energy to power automobiles such as natural gas, propane, biogas, biodiesel, ethanol, and electric power; and (2) the implementation of car share programs," (Chapter 2 page 31)	• "In 2014, ARC conducted a study to calculate the Atlanta Region's contribution to CO2 emissions produced by transportation and household energy use, at a community scale. This report was designed to serve three primary goals. First, it briefly explained how greenhouse gas emissions are believed by the majority of scientists to be a major contributor to observed global climactic variability and change over the past several decades. Second, the report outlined some of the local, regional and federal policies enacted in recent years to address the issue of climate change and its potential impacts. Finally, the report detailed an analysis by ARC to develop a basic greenhouse gas inventory from residential electricity usage and automobile travel at a neighborhood level." (page 210)	• Climate change mitigation is an identified in Chapter 3 of the Transportation 2040 Plan, which talks about the importance of a sustainable environment. • The region has developed a "Four-Part Greenhouse Gas Reduction Strategy" that includes the following components: "Land Use, User Fees, Choices, and Technology," (Transportation 2040 Plan, page 33-34).	• "The Plan Bay Area targets, adopted in January 2011, reflect this Plan's emphasis on sustainability. Sustainability encapsulates a broad spectrum of concerns, including environmental impacts from greenfield development and vehicle emissions, equity impacts from displacement and low-income household affordability, and economic impacts from regional competitiveness. By integrating these three E's — environment, equity and economy — throughout the targets, Plan Bay Area truly aims to measure the success of creating sustainable communities. We paid special attention to the equity component of the three E's triad," (page 18). •"'The California Sustainable Communities and Climate Change Protection Act of 2008' requires all of the state's metropolitan areas to reduce greenhouse gas emissions from cars and light trucks. The law requires that the Sustainable Communities Strategy (SCS) promote compact, mixed-use commercial and residential development. To meet the goals of SB 375, Plan Bay Area directs more future development in areas that are or will be walkable and bikable and close to public transit, jobs, schools, shopping, parks, recreation and other amenities," (page 4). It required the addition of three new elements to the Plan: "(1) a land use component that identifies how the region could house the region's entire population over the next 25 years; (2) a discussion of resource and farmland areas; and	• To aid in mitigating climate change impacts, "The DRCOG 2040 RTP contains strategies and facilities that will help slow the growth in energy consumption. For example, operations management strategies will help keep cars, trucks, and buses moving smoothly by reducing stop-and-go conditions. New roadway lane-miles will address key congestion points. Strategies to enhance the transit system and support TDM, bicycle, and pedestrian improvements will provide alternative means of travel to single-occupant vehicles. The strategies contained in the RTP will help to address energy consumption and the goals associated with providing a sustainable future for the region." (page 54).	• The Plan is combined with the region's Sustainable Communities Strategy, which "charts a course for how the SCAG region will reach state-mandated reductions in greenhouse gas emissions from cars and light trucks, which contribute to climate change," (page 13). •In addition, "the 2016 RTP/SCS for the SCAG region includes an environmental mitigation program that links transportation planning to the environment. SCAG's mitigation program is intended to function as a resource for lead agencies to consider in identifying mitigation measures to reduce impacts anticipated to result from future projects," (page 116). In the Plan, example strategies for consideration are outlined under each identified environmental impact." (page 116). One of the identified impacts is related to climate change, and associated mitigation measures include updating any future RTP/SCS to incorporate polices and measures that lead to reduced greenhouse gas emissions and continuing the coordination with other metropolitan planning organizations regarding statewide strategies to reduce greenhouse gas emissions," (page 120).	• Not Reviewed

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								(3) a demonstration of how the development pattern and the transportation network can work together to reduce GHG emissions," (page 4). • As a result, San Francisco has made a concerted effort to mitigate climate change impacts. The Plan's Performance Target 1 is on Climate protection, and it is outlined in Table 4 on page. 19. It is: "Reduce per-capita CO2 emissions from cars and light-duty trucks by 15 percent (Statutory requirement is for year 2035, per SB375)," (page 19). • The region has made various investments in programs to encourage reduction GHG emissions and improve air quality, as outlined on page 87-89. Car sharing, regional electric vehicle charger network, clean vehicles fee rebate program, incentives towards buying electric cars, and innovative grants are some of the programs outlined in the text.			

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Sustainability	Resiliency/Sustainability/ Sea Level Rise Adaptation	X	X	X	• In the Plan, "Improve the resiliency of the regional transportation system" is identified as a focus area (Chapter 1, page 6). The city formed the "Special Initiative for Rebuilding and Resiliency" to harden infrastructure in the region (Chapter 2 page 29-31).	• The ARC plans to begin leveraging the following analyses and planning activities that have been identified as part of the Plan's "Eco-Logical Approach" to establish rigorous resilience program: 1Prepare a " Regional Ecosystem Framework Development and Analysis; 2. Streamline the NEPA (National Environmental Policy Act) and Accelerate Project Delivery; 3. Update the Metropolitan North Georgia Water District Plan and Corresponding Green Infrastructure Strategies; 4. Develop a Transportation System Preparedness and Resilience Plan." (page 58). • "The primary objective of the resiliency network will be to analyze transportation infrastructure resiliency and travel behavior, in response to applicable federal policies on climate change and extreme weather events. The anticipated work product will be primarily useful in identifying existing and future critical transportation infrastructure that can help address the impacts of extreme weather events. Additionally, the resilience planning will also leverage the recommendations provided by the 2014 Severe Weather Task Force Report, which was established by Governor Nathan Deal." (page 60)	• In the Plan, climate change and air quality are discussed in the Transportation 2040 Update Report on page 40. • The region has developed a "Four-Part Greenhouse Gas Reduction Strategy" that includes the following components: "Land Use, User Fees, Choices, and Technology," (Transportation 2040 Plan, page 33-34). •The PSRC has evaluated potential effects of sea level rise on transportation infrastructure in the region, and has prepared a white paper on system adaptation in Appendix L of the Transportation 2040 Plan.	• MTC is partnering with other agencies to "increase preparedness and resilience to sea level rise and storm events while protecting critical ecosystem and community services. The project, known as 'Adapting to Rising Tides,' is a collaborative planning effort that addresses two questions: (1) How will climate change impacts of sea level rise and storm events affect the future of communities, infrastructure, ecosystems and the economy in the Bay Area? (2) What strategies can we pursue, both locally and regionally, to reduce and manage these risks?" (page 125). The next step will be to develop adaptation strategies (page 125).	• No reference to climate change resiliency efforts is made in the Plan.	• SCAG has been preparing for increasing threats of natural and man-made disasters. "For example, SCAG funded the Green Region Initiative category of projects, as part of the Sustainability Planning Grant Program. These grants provide local governments with technical expertise so they can develop local climate action plans, energy plans, water plans, open space strategies and public health plans. Working to make our region more resilient to the inevitable consequences of continued climate change is a major priority of this Plan, and it will continue to resonate in future updates as we head toward 2040 and well beyond," (page 183).	• Not Reviewed

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Livability Focus	Transit Oriented Development		X	X	• In the Plan, transit-oriented development is incorporated into the land use strategy. As part of the Plan's Shared Vision, Shared Land Use Designations have been created "where transportation resources can attract residents and businesses while providing efficient, sustainable and cost effective mobility". "Each county, borough, city or region has created these areas and designated them as areas for development and/or transportation investments," (Chapter 1, page 12). • Under the goal of "Improve the regional quality of life," several near-term actions have been identified in the Plan, including "Complete planning and/or environmental assessments for transit-oriented development and transportation improvement vision projects linked to land use plans," (Chapter 1, page 8). Several transit-oriented development projects have been identified in the Plan, (Chapter 1, page 8).	• Transit-oriented development is identified as a growth and development solution on page 148. 325 acres have been identified around MARTA rail stops that are available for new TOD (page 151).	• In the Plan, transit-oriented development is included in both the Plan and the update as a need to recognize that accommodating growth in transit "can lead to a range of substantial social and environmental benefits." (Transportation 2040 Update Report, page 49) • The region formed "a region-wide coalition of businesses, developers, local governments, transit agencies, and nonprofit organizations in an effort designed to help implement VISION 2040, Transportation 2040, and the Regional Economic Strategy. Called the Growing Transit Communities Partnership, the group worked together to create recommended solutions that will encourage high quality, equitable development around high capacity transit. The Growing Transit Communities Partnership explored new methods of evaluating and mapping neighborhoods to determine whether they provide good access to opportunity. Tools like this can help to evaluate how transportation can provide residents and workers access to areas of opportunity and to guide future investments," (Transportation 2040 Update Report, page 50). A "Growing Transit Communities Strategy" was formed that incorporates these recommendations into a toolkit, with "24 recommended strategies, eight implementation approaches, and corridor specific priorities that will guide an evolving approach to transit communities," (Transportation 2040 Update Report, page 52).	• One of the main objectives of the MTC Plan is to focus development in the Priority Development Areas, which are close to transit. "In May 2012, MTC approved a new funding approach that directs specific federal funds to support more focused growth in the Bay Area. The OneBayArea Grant (OBAG) program commits $320 million over the next four years ($14.6 billion over the life of the Plan), from federal surface transportation legislation currently known as MAP-21 (Moving Ahead for Progress in the 21st Century). OBAG is designed to support jurisdictions that focus housing growth in Priority Development Areas through their planning and zoning policies, and the production of housing units," (page 76). • "Plan Bay Area includes a discretionary funding commitment of $3.9 billion over the next 28 years to support projects and programs that will boost system efficiency. These include the Transit Performance Initiative (TPI) that aims to use low-cost technology upgrades to dramatically improve the speed and reliability of roadways and transit service. The Transit Performance Initiative (TPI) makes a regional investment in supportive infrastructure to achieve performance improvements in major transit corridors where current and future land use supports high-quality transit," (page 81-82). These strategic investments are meant to improve access to transit and promote transit-oriented development.	• The DRCOG region has identified promoting transit as a priority. Transit-oriented development has been identified as a Transportation Demand Management Strategy to "promote efficient land development designs," (page 20). In addition, rapid transit capacity projects have been identified as part of the project evaluation process for regionally significant projects, because BRT projects are deemed to provide a significant impact on the region, (page 27).	• The Plan includes a section on "Livable Corridors Strategies" which "seek to revitalize commercial strips through integrated transportation and land use planning that results in increased economic activity and improved mobility options." Through previous corridor studies research, the MPO has identified ways to promote biking and walking in these locations, (page 78). • The land use pattern presented in the Plan proposes locating housing and employment growth within the region's "High Quality Transit Areas (HQTAs), defined as areas within one-half mile of a well-serviced fixed guideway transit stop, and including bus transit corridors where buses pick up passengers every 15 minutes or less during peak commute hours, and Transit Priority Areas (TPAs), which are defined as locations where two or more high frequency transit routes intersect." (page 20). The SCAG developed a 2016 Active Transportation Plan that promotes new strategies and programs for furthering active transportation projects. "Active Transportation has 11 specific strategies to maximize active transportation in the SCAG region. These are grouped into four broad categories: regional trips, transit integration, short trips and education/ encouragement. All 11 strategies are based on a comprehensive local bikeway and pedestrian network that uses Complete Streets principles," (page 95).	• Not Reviewed

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Livability Focus	Complete Streets		X	X	• In the Plan, under the goal of "Improve the regional quality of life," several near-term actions have been identified, including "continue implementation of complete streets policies," (Chapter 1, page 8). • Complete Streets design principles and safety efforts are discussed (Chapter 4 page 29). Complete Streets initiatives have been identified as a method to improve safety. "These features include sidewalks, paved shoulders suitable for use by bicyclists, bicycle lanes, share-the-road signage, crosswalks, pedestrian control signalization, bus pull-outs, curb cuts, raised crosswalks, ramps, and traffic calming measures designed to allow pedestrian and motor traffic to easily coexist. Several municipalities within the NYMTC planning area adopted complete streets policies prior to the passage into law of New York's Complete Streets Act in August 2011. 69 NYMTC agencies must consider complete streets design principles on all future projects which receive both federal and state funding," (Chapter 4, page 29). • The Bike/Ped Network is discussed in Appendix 2. This section includes an existing conditions analysis, improvement recommendations, and on-going and planned initiatives.	• The ARC has identified "Walking and Biking High Priority Focus Areas" through an overlay of areas identified for a: "higher potential demand for walking and biking, areas with a higher crash risk for people walking and biking, Equitable Target Areas, activity centers, areas with a higher transit propensity, and walk-friendly and bike friendly communities," (page 205). This analysis has helped to target specific areas for incorporation of bicycle and pedestrian projects. • As part of the "Solutions" section, solutions for bicyclists and pedestrians are identified on page 120. These include: "community-scale walking and bicycling networks, first- and last- mile connections to regional transit systems, and the completion of a regional-scale trail network," (page 120).	• In the Plan, complete streets regional policies are listed as a strategy under "Regional Programs and Projects: Improving Mobility Through Strategic Capacity," (Transportation 2040 Plan, page 75). • An Active Transportation Plan has been incorporated as a new element in Appendix O. "This Plan describes the need for active transportation, provides guidance and resources for local jurisdictions for developing their bicycle and pedestrian elements, and describes how the region is working together to support active transportation. The ATP also articulates the multiple benefits of active transportation," (Transportation 2040 Update Report, Appendix O, page 9).	• In the Plan, the One Bay Area Grant Program (OBAG) outlined in the Plan is designed to provide funding for complete streets. "In addition to providing funding to support Priority Development Areas, OBAG requires each jurisdiction to adopt policies to support complete streets and planning and zoning policies that are adequate to provide housing at various income levels, as required by the Regional Housing Need Allocation (RHNA) process," (page. 67, 70, 75, 78). • Target 5 of the Plan is: "Increase the average daily time walking or biking per person for transportation by 70 percent (for an average of 15 minutes per person per day," and the Plan mentions complete streets as an investment to get residents biking and walking on page 102. • "In December 2009 MTC programmed $80 million to implement the Climate Initiatives Program, a multi-faceted program aimed at reducing transportation-related emissions and vehicle miles traveled (VMT), while also informing the region as to the most effective strategies to reduce emissions. Since then, the program has funded innovative pilot projects to test the effectiveness of reducing emissions through incentives for alternative fuels and vehicles, creation of electric vehicle and bike-sharing programs, and removal of barriers to walking and biking for youth and their families, and other projects." page 125.	• The DRCOG 2035 Plan called for the provision of pedestrian and bicycle facilities and services by local and state governments, recreation districts, and other agencies to encourage walking and bicycling for transportation," (page 15). This notion has been carried forward into the 2040 Plan as well. "The provision of bicycle and pedestrian facilities will be specifically addressed in all new transportation design and planning studies. Arterial roadway projects selected by DRCOG for inclusion in the TIP that are within the Urban Growth Boundary/Area must assure that on-street bike facilities, as well as sidewalks or adjacent multipurpose trails are provided. Local governments should adopt policies that consider the provision of bicycle and pedestrian facilities in conjunction with all new development and redevelopment," (page 15).	• "Thirty-eight percent of all trips in the SCAG region are less than three miles. The 2016 RTP/SCS includes land use strategies, Complete Streets integration and a set of state and local policies to encourage the use of alternative modes of transportation for short trips in new and existing Neighborhood Mobility Areas (NMAs) and Complete Communities," (page 79). • Neighborhood Mobility Areas are a "have a high intersection density, low to moderate traffic speeds and robust residential retail connections. These areas are suburban in nature, but can support slightly higher density in targeted locations. The land use strategies include shifting retail growth from large centralized retail strip malls to smaller distributed centers throughout an NMA. This strategy has shown to improve the use of active transportation or NEVs for short trips," (page 79). • "Complete Communities" are "mixed-use districts through a concentration of activities with housing, employment, and a mix of retail and services, located in close proximity to each other. Focusing a mix of land uses in strategic growth areas creates complete communities wherein most daily needs can be met within a short distance of home, providing residents with the opportunity to patronize their local area and run daily errands by walking or cycling rather than traveling by automobile," (page 79).	• Not Reviewed

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Livability Focus	Addressing Gaps in Service/Accessibility (Ladders of Opportunity): • Housing • Employment • Healthcare	X		X	• In the Plan, Chapter 7 on Additional Planning Considerations, includes an Environmental Justice Assessment and other social considerations, (page 5.) The Environmental Justice Assessment identified Communities of Concern, which are "defined as a census tract that is both a Minority Community and a Low-Income Community," (Chapter 7, page 6). Once identified, the analysis considered: "travel characteristics, travel time to work, and linguistic isolation." The analysis is examined further in Appendix 4, which includes the full Environmental Justice Assessment. • Appendix 6 includes the Coordinated Public Transit- the Human Services Transportation Plan, which identifies gaps in service, unmet needs, and identification and prioritization of strategies.	• Promoting an accessible and equitable transportation system is an objective of the Plan (page 47). • "ARC uses the Equitable Target Areas (ETA) Index- a tool developed to measure the impacts of investments and programs contained within The Atlanta Region's Plan on ETAs. It is also used as input for project prioritization and evaluation and monitoring resource allocation." (page 76) • The full Equitable Target Area Methodology is listed in Appendix J. • Workshops: "The Building Opportunity Workshop Series was created to engage leaders in Equitable Target Areas about how growth and development takes place. Forums have focused on transportation access and poverty, livability through an equitable lens, and economic opportunity. Residents see chances to remove barriers to opportunity, link investments and Plan them for maximum community benefit. ARC seeks to harness the energy from this series and its Poverty Equity Opportunity (PEO) Committee to create chances for community leaders to engage in meaningful conversations on transportation." (page 195)	• Ensuring equal access for all members of the region is a priority of the Plan. "Between 2010 and 2014, a region-wide coalition of businesses, developers, local governments, transit agencies, and nonprofit organizations came together in an effort designed to help implement VISION 2040, Transportation 2040, and the Regional Economic Strategy. Called the Growing Transit Communities Partnership, the group worked together to create recommended solutions that will encourage high quality, equitable development around high capacity transit. The Growing Transit Communities Partnership explored new methods of evaluating and mapping neighborhoods to determine whether they provide good access to opportunity. Techniques such as opportunity mapping should be considered as the region plans and implements transportation projects. Opportunity mapping provides an analytical framework to measure opportunity comprehensively in the region and determine who has access to opportunity rich areas. With origins in social science research, the indicators of opportunity for a region are defined by broad categories like education, economy, transportation, housing, environment, and health. The indicators for each neighborhood are added together to create an overall "opportunity score", sorted into categories of access to opportunity: very low, low, moderate, high, and very high. Maps are shaded with colors that correspond to the opportunity score and data is overlaid on the opportunity map for analysis,"	• "About one-fifth of the Bay Area's total population lives in areas with large numbers of low income and minority populations. Promoting these people's access to housing, jobs, and transportation not only advances Plan Bay Area's objective to advance equity in the region; it also increases our chances of meeting other performance targets," (page 20). "The region conducted an Equity Analysis identifies "communities of concern" in the region with concentrations of socioeconomically disadvantaged or vulnerable populations. MTC developed the definition of communities of concern in concert with key regional equity stakeholders, public agency staff, and community representatives, who also prioritized the equity measures based on what stakeholders believed were the region's most significant equity related issues today and in the context of future growth: affordability, equitable growth, healthy communities, access to jobs, and equitable mobility for all system users," (page 20). • MTC and ABAG then adopted five 'Equity Analysis Measures' to evaluate equity concerns: (1) "Housing and Transportation Affordability - % of income spent on housing and transportation by low-income households, (2) Potential for Displacement- % of rent-burdened households in high-growth areas, (3) Healthy Communities- average daily vehicle miles traveled per populated square mile within 1,000 feet of heavily used roadways, (4) Access to Jobs- average travel time in minutes for	• In the Plan, Environmental Justice is identified as a consideration in regard to the impacts of the fiscally constrained projects on minority populations (page 54-58). The environmental justice evaluation included in the Plan consisted of a multi-step process. Using 2010 Census data, environmental justice areas were identified based on concentrations of low-income and minority populations. Low-income populations were defined as those with a household income of at or below the poverty line, defined as $23,850 for a family of four. TAZs were identified as containing low-income populations if the percentage of low-income residents within that TAZ was at or above the regional average of 11 percent. TAZs were identified as containing minority populations if the percentage of minority populations within that TAZ was at or above the regional percentage of 33 percent (55). The Plan then explores potential benefits and impacts of the 2040 Cost Feasible LRTP on the EJ communities, based on project location.	• "Building a Plan based on the principles of social equity and environmental justice," is an identified theme. The Plan is designed to create region- wide benefits that are distributed equitably, while avoiding having any one group carrying the burdens of development disproportionately. It is particularly important that the Plan consider the consequences of transportation projects on low-income and minority communities and minimize negative impacts. In striving for environmental justice, the Plan provides specific measures to lessen the negative environmental impacts of transportation projects on these communities, as well as metrics to monitor how successful these measures are throughout the communities," (page 15). • "This Plan's vision and goals include ensuring that region-wide benefits improve social equity—that is, the benefits of our Plan are realized by all populations in our Southern California region while its burdens are not carried disproportionately by one group over another. Providing people throughout our region with access to high quality transit and ensuring that they also have access to more affordable housing are related objectives. Currently, SCAG is partnering with the state and other regional agencies to study issues related to displacement and travel behavior near transit. Those results will inform future regional policies. Community advocates and other housing stakeholders are working to ensure that investments in traditionally low-income communities benefit existing	• Not Reviewed

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							(Transportation 2040 Update Report, page 50).	commute trips, and (5) Equitable Mobility- average travel time in minutes for non-work-based trips," (See Chapter 1, Table 5, page 20.) • Equity is also covered under Target 7 which is: "Decrease by 10 percentage points (to 56 percent, from 66 percent) the share of low-income and lower-middle income residents' household income consumed by transportation and housing," (page 104). • The "Key Equity Analysis Findings" are presented on page 111, and a full "Equity Analysis Report" is listed in Appendix 1.		residents and businesses instead of dividing communities," (page 58). • The Plan's environmental justice program consists of "technical analysis" and "public outreach." "In the development of the analysis, SCAG identified 18 performance measures to analyze existing environmental justice parameters in the region and to address any potential impacts of the 2016 RTP/SCS on the various environmental justice population groups. SCAG also examined potential impacts at various geographies and specifically employed a community-based approach for the 2016 RTP/SCS based on guidance from stakeholders," (page 169).	

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Regionalism	Cooperation between agencies and partners (Regional Models of Cooperation)	X			• To promote regional collaboration within the NYMTC planning area, three sub regions were created called Transportation Coordinating Committees (TCCs). These areas provide a forum for planning at a more localized level within a large metropolitan region. The MPO's regional coordination process is listed in Chapter 1 on pages 26-31.	• "The primary way in which The Atlanta Region's Plan Transportation Element's recommendations are shaped to address issues at a local level is through the Comprehensive Transportation Plan (CTP) program. The purpose of the program is to ensure that transportation infrastructure has a positive impact on strengthening our economy and communities at both the local and regional levels by providing financial incentives for counties and their constituent municipalities to develop joint long-range transportation plans. Since 2005, ARC has made federal funding available to assist counties and cities in developing joint long-range transportation plans. These plans serve as the foundational building blocks of regional transportation planning efforts and are updated on a five to seven year rotating cycle. While participation in the program is voluntary, most of the Region's jurisdictions are active participants and have found the program to be a valuable resource in understanding their needs, identifying solutions, establishing priorities, and defining a course of action to get much-needed projects funded and built." (page 52)	• In the Plan, "The Growing Transit Communities Program demonstrates the value in an ongoing regional coordination to address several challenges currently facing the region as it continues to grow," (Transportation 2040 Update Report, page 50). "It is a region-wide coalition of businesses, developers, local governments, transit agencies, and nonprofit organizations came together in an effort designed to help implement VISION 2040,Transportation 2040, and the Regional Economic Strategy," (Transportation 2040 Update Report, page 50). • The "Coordinated Transit-Human Services Transportation Plan" serves as an example of regional coordination efforts for the MPO. It is included in Appendix K in the Transportation 2040 Plan and an update is mentioned in the Transportation 2040 Update Report on page 44.	• In the MTC planning area, a regional initiative called FOCUS was launched in 2008 to support the local coordination efforts in the Plan Bay Area region. It consisted of the Association of Bay Area Governments (ABAG) and the MTC. "Building upon the collaborative approach established through FOCUS, local input has driven the set of alternative scenarios that preceded and informed the development of Plan Bay Area. The non-profit and business communities also played a key role in shaping the Plan. Business groups highlighted the need for more affordable workforce housing, removing regulatory barriers to infill development, and addressing infrastructure needs at rapidly growing employment centers. Environmental organizations emphasized the need to improve transit access, retain open space, provide an adequate supply of housing to limit the number of people commuting into the region from nearby counties, and direct discretionary transportation funding to communities building housing in PDAs. Equity organizations focused on increasing access to housing and employment for residents of all income categories throughout the region, and establishing policies to limit the displacement of existing residents as PDAs grow and evolve. All of these diverse voices strengthened this Plan," (page 2).	• In the Plan, "the decision-making process recognizes transportation issues cross the boundaries and responsibilities of individual jurisdictions and organizations. The DRCOG Board of Directors considers public input and advice of numerous committees, including the Regional Transportation Committee (RTC), the Transportation Advisory Committee (TAC), and other specialized committees. The RTC, which includes elected public officials, Colorado Transportation Commissioners, Regional Transportation District (RTD) Board members, and the public, reviews regional transportation issues and DRCOG transportation program issues and provides policy recommendations to the DRCOG Board," (page 59).	• In the Plan, coordination efforts between various agencies and stakeholders are listed as part of the Plan development process. During identification and review of scenarios, the public was involved through open houses, online surveys, and regular meetings of the various committees and working groups. All this information was used to develop the preferred scenario presented in the Plan (page 67). • "The overall Plan was developed with input from local governments, county transportation commissions (CTCs), tribal governments, non-profit organizations, businesses and local stakeholders within Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura counties. Outreach and coordination efforts also included work with providers of public transportation, county transportation commissions, and designated Consolidated Transportation Services Agencies (CTSAs) to ensure consistency with the plans and programs of these agencies, including short and long range plans of Coordinated Public Transit Human Services Transportation Plans. A fuller discussion of these plans can be found on pages 61–65 of the Transit Appendix," (67).	• Not Reviewed

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Regionalism	Activity Based Modeling/ Visualization			X	• In the Plan, the New York Best Practice Model used for development of the Plan is an activity/tour-based model. It is discussed in Chapter 2 on page 5.	• In the Plan, an Activity-Based Travel Demand Model was used, and is discussed on page 26. • Visualization is included in the Plan as a component of the project evaluation web-based tool. "A visualization tool was created online to allow the public access to each project's analysis, providing an innovative way for the public to be involved in the project evaluation process," (page 56).	• In the Plan, a regional travel demand model was used (Transportation 2040 Plan, page 67).	• The MTC's Regional travel demand model was used in the Plan (page 54).	• The DRCOG Travel Demand Model was used in the Plan, as well as an air quality conformity model (page 44).	• The SCAG Regional Travel Demand Model (RTDM), was used, which is mentioned on page 31.	• Not Reviewed
Regionalism	Parking Management			X	• In the Plan, parking management is discussed as one of the Transportation Demand Management Strategies identified and is listed in Chapter 4 on page 16-18. Parking management strategies discussed include: "time of day and day of week regulations, parking pricing plans, regulations concerning the quantity of parking that should be provided at particular locations, recommendations of where shared parking would be appropriate and guidelines for parking design."	• In the Plan, parking management strategies are discussed as a solution for commuters on page 140.	• In the Plan, parking management is discussed as one of the Transportation Demand Management Strategies identified in the Transportation 2040 Plan and is listed in Chapter 5 on page 58. • A new Transportation Demand Management Action Plan has been added in Appendix T under the Transportation 2040 Update Report.	• In the Plan, it states that parking charges at Treasure Island in San Francisco are mentioned as part of the Treasure Island strategies for congestion management (page 85).	• In the Plan, parking management strategies are listed as an "incentive to encourage the use of travel mode options" under Transportation Demand Management (page 20).	• In the Plan, "parking management and parking cash-out policies" have been identified as a Transportation Demand Management (TDM) strategy on page 86. Parking management is also listed as strategy to be considered under Integrated Corridor Management (ICM). ICM is a Transportation Systems Management (TSM) Strategy that examines all components of a corridor to determine the most efficient way to move people and freight and has been utilized by Caltrans in the region (page 86).	• Not Reviewed

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Financing	Innovative Financing strategies			X	• In the Plan, Chapter 6 includes additional financing strategies for implementing the Plan. It includes funding estimates to determine what will be available to support Plan implementation, as well as additional financing strategies that could be implemented to fund projects, and strategies for ensuring the availability of those additional funds. (Chapter 6, page 18-26). "Additional funding strategies include: public-private partnerships, tax increment financing, debt financing, and supplemental federal funding." Travel-based surcharges are also used as a way to accrue the required region wide financing for projects, (Chapter 6, page 18-26).	• Chapter 5 - discusses the region's financial strategies. • The ARC has identified some innovative strategies for funding their public transit system. "MARTA is the only transit system in the region supported by a multi-jurisdiction sales tax, in the form of a one-percent sales tax levied in the City of Atlanta and Fulton and DeKalb Counties. It generated about $14.6 billion in 2016 dollars, in addition to the $3.9 billion received from fare box receipts and other revenue streams. Combined, there is sufficient funding available for MARTA over the life of the Plan. Further benefitting MARTA has been the lifting of the "50/50" requirement by the Georgia state legislature. The agency will be able to enjoy significantly more flexibility in allocating its funding as it is no longer required to allocate approximately 50% of funding to operating costs and the other 50% to capital costs. This greater flexibility will allow MARTA to be more proactive in addressing any funding concerns, as well as employ innovative cost saving measures," (page 167).	• "The original Plan establishes three strategies for addressing: (1) congestion and mobility; (2) the environment; and (3) transportation funding. These strategies address the need for a large and sustainable investment in the region's transportation system to meet the needs of a growing population," (page 5, 13). "Building on VISION 2040, projects and programs have been identified by first prioritizing investments in preservation, maintenance and operation of the existing transportation system. Investments to improve the safety and security of the transportation system are identified next, followed by investments that improve the efficiency of existing infrastructure. Finally, strategic capacity projects have been identified," (Transportation 2040 Plan, page 18). •The Transportation 2040 Update Report includes a major update in the financial strategy background information from 2010, listed in Appendix F. "A new revenue scenario was created that includes future revenues from sources that have yet to be enacted, but are necessary to fully implement the projects and programs contained in the Plan." The main component of this is the tie-in of user fees that are more explicitly connected to the use of the system (Transportation 2040 Update Report page 35).	•"Plan Bay Area structures an investment Plan in a systematic way to support the region's long-term land use strategy, relying on a performance assessment of scenarios and individual projects. The Plan makes investments in the region's transportation network that support job growth and new homes in existing communities by focusing the lion's share of investment on maintaining and boosting the efficiency of the existing transit and road system. Plan Bay Area also takes a bold step with strategic investments that provide support for focused growth in Priority Development Areas, including major new transit projects and the OneBayArea Grant program," (page 63). • "The One Bay Area Grant (OBAG) program rewards jurisdictions that focus housing growth in Priority Development Areas (PDAs) through their planning and zoning policies, and actual production of housing units," (page 14). • Chapter 4 of the Plan discusses the region's financial strategies. Six investment strategies have been identified: "(1) Maintain the Existing Transportation System, (2) Support Focused Growth, (3) Build Next-Generation Transit, (4) Boost Freeway and Transit Efficiency, (5) County Investment Priorities, (6) Protect our Climate," (page 69-87).	•"The DRCOG 2040 RTP was built from the 2035 RTP and the process used to prepare it. The following steps were followed to prepare the 2040 RTP: (1) Costs- Total Metro Vision transportation needs identified in the 2035 RTP for all expenditure categories were reconsidered, validated, and updated. Cost estimates for regionally funded roadway projects in the Fiscally Constrained 2035 RTP were reviewed in detail. All costs were updated from a 2008 constant dollar basis to a 2015 constant dollar basis for the 2040 RTP. (2) Revenues- Revenues from CDOT, RTD, the U.S. Department of Transportation, local governments, private entities, and other sources were estimated," (page 32). The DRCOG broke out the different types of revenues expected to be available for funding in 2040 into 3 different categories: (1) "Transit- RTD annually prepares a FasTracks financial Plan, which includes a comprehensive assessment of resources available to the entire RTD system. This is subject to detailed scrutiny by the DRCOG Board. (2) Regional roadways and other state highways- CDOT's Division of Transportation Development (DTD) and Office of Financial Management and Budget lead a multi-agency process for developing estimates of long-range funding. This process is known as Program Distribution. (3) Local revenues- These are estimated by DRCOG staff based on information	• In the Plan, "there are several new funding sources that are reasonably expected to be available for the 2016 RTP/SCS. Unique to this Plan, it used the following guiding principles to identify reasonably available revenues: (1) Establish a user fee-based system that better reflects the true cost of transportation, provides firewall protection for new and existing transportation funds, and ensures an equitable distribution of costs and benefits. (2) Promote national and state programs that include return-to-source guarantees, while maintaining flexibility to reward regions that continue to commit substantial local resources. (3) Leverage locally available funding with innovative financing tools (e.g., tax credits and expansion of the Transportation Infrastructure Finance and Innovation Act [TIFIA]) to attract private capital and accelerate project delivery. (4) Promote funding strategies that strengthen the federal commitment to the nation's goods movement system, recognizing the pivotal role that our region plays in domestic and international trade," (page 133).	• The financial component of the Plan highlights the federal requirements identified for financial components of LRTPs. The Pikes Peak Area Council of Governments (PPACG) developed a three-step process which allowed for the determination of "the adequacy of the financial resources for maintaining, operating, and expanding the regional transportation system," (page7-6). The section discusses the region's participation "in the governor's efforts to identify long-term sustainable programs and funding sources for transportation in Colorado. In 2007, then-Governor Ritter established the Transportation Finance and funding thresholds with potential revenue sources. The preferred funding threshold was $2.5 billion in annual transportation funding for the Colorado Department of Transportation (CDOT). This represents an increase of $1.5 billion per year over current funding. By changing the current structure of taxes and fees, policy makers are not restricted to just one source. In other words, the entire increase needed to generate sufficient revenue to close funding gaps does not have to be loaded onto a single source, as doing so could lead to an onerous increase. Rather, policy makers may find it more equitable and politically palatable to distribute tax and fee increases across several sources." (page 7-11-7-12).

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									obtained from local governments, special districts, and authorities," (page 31).		

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Financing	Public-Private Partnerships			X	• In the Plan, public-private partnerships (P3) are listed as an additional funding strategy for implementing the Plan. One particular type of P3 partnership is the "Design-Build-Operate-Maintain (DBOM). Under DBOM, a project's implementing agency contracts with a private entity to construct the project and then operate and maintain it for a set period of time. In this type of arrangement, the user fees act as a return on the private entity's investment in the project. Examples of P3s in the form of DBOMs in the New York City metropolitan region include a completed project – New Jersey Transit's Hudson-Bergen Light Rail in northern New Jersey -- and the planned Goethals Bridge replacement on Staten Island," (Chapter 6, page 18).	• In the Plan, P3 is used as a strategy for the implementation of certain types of projects. Once projects are identified for potential pursuit as P3 projects, "they go through a rigorous screening process to determine their viability as a P3 project and identify how they compare to other projects under consideration. This allows for focused project development and effective use of the Department's limited resources. The screening process includes the analysis of the following factors: - Project scope suitability - Project maturity - Financial feasibility - Potential value added from private sector involvement - Institutional/political support," (page 170).	• The PSRC region is researching the use of P3s as a funding mechanism for toll facilities, (Transportation 2040 Update Report, Appendix F, page 19).	• Not mentioned	• In the Plan, public-private partnerships are mentioned as a funding source on page 13. "A variety of locally-derived funding sources, such as local government funds, public private partnerships, and other creative sources, are currently helping to fill a small part of the gap in transportation funding."	• In the SCAG region, public-private partnerships are used as a way to fund projects. 2006 Statutes "authorized Caltrans and regional transportation agencies to enter into comprehensive development lease agreements with public and private entities or consortia of those entities for certain types of transportation projects. 2009 Statutes established the legislative authority until January 1, 2017, allowing for regional transportation agencies and Caltrans to enter into an unlimited number of public-private partnerships (PPP) and deleted the restrictions on the number and type of projects that may be undertaken, "(page 134).	• Not mentioned
Financing	Congestion Pricing			X	• In the Plan, congestion pricing is discussed as a TSM&O technique to manage traffic flow (Chapter 4 page 9). Types of congestion pricing techniques include: -"Variably priced lanes, such as high occupancy toll (HOT) lanes; - Variable tolls on entire roadways (Chapter 4 Transportation System Operations and Management 4-10) - Variable parking prices; - Cordon charges: fixed or variable charges to drive within or into an area; and - Area-wide charges: per-mile charges within an area or network that may vary by level of congestion."	• Not mentioned	• In the PSRC region, congestion pricing is considered in Appendix F. Cordon, or area pricing, which is being implemented in the region, is relatively new in the US, but the concept is quite simple: "vehicles are charged a toll to enter a highly congested area," (Transportation 2040 Update Report, Appendix F, page 28). Worldwide, it has caused significant congestion reduction, as people are forced to find alternative modes of travel, or other routes.	• In the Plan, congestion pricing implementation in downtown San Francisco is currently underway in order to manage the region's expected housing and job growth for these areas, (page 9). • "Congestion pricing is also being advanced in San Francisco through a demonstration project as a part of the Treasure Island development project," (page 85). Treasure Island is a Priority Development Area (PDA) that will include "8,000 residential units, along with retail and commercial uses. The Treasure Island Transportation Implementation Plan, adopted as part of the development project's approval, calls for an integrated approach to managing traffic and improving mobility management, including a congestion fee to be assessed for residents traveling by private automobile	• In the Plan, congestion pricing is listed as one of the technologies under "BRT and managed lanes," which is one of the four main types of service and vehicle technologies in the 2040 Fiscally Constrained Transit System (page 45-46).	• In the Plan, "congestion pricing is identified as a transportation demand management tool incorporated into the 2016 RTP/SCS that would reduce greenhouse gas emissions in addition to a more efficient utilization of existing facilities," on page 123.	• Not mentioned

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								on or off the island during peak hours. The congestion fee, in combination with parking charges and a pre-paid transit voucher for each household, will help fund a comprehensive suite of transportation services including new ferry service to San Francisco and enhanced East Bay bus services," (page 85).			

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Plan Development	Performance-Based Planning Framework	X			• In the Plan, performance measures were mentioned in the Congestion Management Process section of the Plan (Chapter 4 page 24). Some of the measures are: Demand-to-Capacity Ratio, Vehicle Hours of Delay, Person Hours of Delay, Average Travel Speed, Lane-Miles of Congestion, and Travel Time Index, (page 4-25). The measures were used to evaluate congestion in the region. The MAP-21 Performance Measures are identified in Chapter 4 on page 26. The Plan states that "at a later date the NYMTC will be working to address the performance measures requirements included in MAP-21."	• The Plan incorporates the MAP-21 performance goals into its project prioritization process (page 56). "ARC's Activity Based Model (ABM) offers insight to how well the current list of projects meet our regional goals. The results of these analyses showcase The Atlanta Region's Plan's expected impact on key regional measures including mobility, safety, economic growth and environmental impact in the year 2040," (page 176). Each measure was indexed on a 0-1 scale and then weighted based on a "sensitivity test" and the plans goals and objectives (see page 976 in Appendix H). • Beyond the performance measures required by MAP-21, the ARC has initiated the process of identifying performance measures and targets for the next Plan update. "Asset management and state of good repair, for both roadways and transit systems, are emerging key metrics to be emphasized in future monitoring and reporting processes. For transit specifically, accessibility and equity are also likely to be emphasized," (page 195).	•In the Plan, monitoring Implementation and System Performance is included in Chapter 6 of the Transportation 2040 Plan (page 91). •The Transportation 2040 Update Report includes a detailed summary of the MAP-21 provisions, as well as the "PSRC response to MAP-21." It states that the performance management requirement of MAP-21 will be fully integrated into the next Plan update. "Guidance on performance measures and targets will be rolled out in three phases through 2015. The timing of this program will be aligned with the next Plan update, allowing for it to be fully incorporated in the next Plan update. PSRC is developing a Transportation 2040 Performance Trends program that will incorporate MAP-21 measures," (Transportation 2040 Plan, page 66).	• The MTC critically examined a set of performance targets using established evaluation criteria. "After six months of discussion and debate reflecting input from local stakeholders, equity, environment and business advocates, and concerned members of the public, a list of 10 preferred targets took shape." A summary of targets is in Chapter 1 Table 4, page 19. "Two of the targets are not only ambitious — they also are mandated by state law. The first- requires the Bay Area to reduce its per-capita CO_2 emissions from cars and light-duty trucks by 15 percent by 2040. The second mandatory target addresses adequate housing by requiring the region to house 100 percent of its projected population growth by income level. Plan Bay Area achieves both these major milestones. The eight voluntary targets seek to promote healthy and safe communities by reducing premature deaths from air pollution, reducing injuries and fatalities from collisions, increasing the amount of time people walk or cycle for transportation, and protecting open space and agricultural lands. Other targets address equity concerns, economic vitality and transportation system effectiveness. Plan Bay Area meets some, but not all, of the voluntary targets. (See Chapter 1, Table 4 for a summary of all the Plan Bay Area performance targets.)" The Plan also includes a section on how each target performs to gauge how successful the Plan is in implementing the region's vision. It is outlined in Chapter 5, as well as a Performance Assessment Report in Appendix 1.	• The DRCOG has identified a set of performance measures that were used to evaluate the performance of the 2015 transportation system in comparison to the Fiscally Constrained System presented for 2040. In addition to identifying the change in population and employment between 2015 and 2040, other measures listed in the Plan include: (1) "Total Person Trips (incl. walk and bicycle trips) which is broken out into Bicycle and Walking Trips and Vehicle Trips as sub-categories (2) Vehicle Miles Traveled (VMT) (3) Per Capita VMT (4) Vehicle Hours Traveled (5) Average vehicle speed - all day (mph) (6) Average vehicle speed - peak hours (mph) (7) Person Miles Traveled (no transit) (8) Person Hours Traveled (no transit) (9) Rail transit trips (boarding) (10) Total transit trips (linked trips) (11) Person Miles Traveled on transit (12) Transit share of all daily trips (13) Transit share of all daily work trips (14) Share of total population with good transit-job accessibility (15) Share of population in low-income or minority areas with good transit-job accessibility (16) Roadways with 3+ hours of severe congestion (lane-miles) (17) Vehicle Hours of Delay (18) Percent of VMT in severe congestion," (page 53).	• "To demonstrate how effective the Plan would be toward achieving our regional goals, SCAG conducted a "Plan vs. No Build" (or Baseline) analysis—essentially comparing how the region would perform with and without implementation of the Plan," (page 153). "In the discussion of performance outcomes, three scenarios are referenced: Base Year, Baseline and Plan. Base Year represents existing conditions as of 2012, Baseline assumes a continuation of the development trends of recent decades, and Plan represents future conditions in 2040," (page 154). •"The Plan includes several performance outcomes and measures that are used to gauge the region's progress toward meeting their goals. Performance outcomes identified include: (1) Location Efficiency (2) Mobility and Accessibility (3) Safety and Health (4) Environmental Quality (5) Economic Opportunity (6) Investment Effectiveness (7) Transportation System Sustainability (8) Environmental Justice,"(page 154-158). • There is also a performance measure section in the Appendix.	• Not Reviewed

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Plan Development	Needs Assessment Component: • How are the goals and objectives set • Identification of measures • Project evaluation/prioritization	(N/A)	(N/A)	(N/A)	• In the Plan, goals are identified as part of the Shared Vision. These goals were developed by consensus with NYMTC members and are listed along with desired outcomes of each goal and near-term actions in Chapter 1 on page 6-11. Measures and project prioritization is not clearly defined. Transportation investments in strategic projects are identified to further the Plan's goals in addressing the region's needs. Projects are divided into three categories: those that preserve the system, those that enhance the system, and those that grow the system (Chapter 1, page 17).	• The Plan has a three-step project evaluation process. "It uses a Benefit/Cost (B/C) Ratio in which all projects are run through a travel demand model to estimate their future benefit, which is monetized and divided by cost to determine the overall value of the projects. It also uses a Criteria Method in which individual performance metrics, both observed and modeled, are indexed, weighted, and summed together to give each project a score for their performance. ARC has made changes to previous methodologies to promote transparency, objectivity, and greater accuracy. Current needs and future performance were separated as two distinct dimensions of transportation projects. A proposed project's need demonstrates the current conditions that necessitate a project through real world data and tools including measures for safety, congestion, social equity, reliability, air quality, and freight usage. A visualization tool was created online to allow the public access to each project's analysis, providing an innovative way for the public to be involved in the project evaluation process." (Appendix H, page 966).	• Plan investment needs are listed on page 44 of the Transportation 2040 Plan. • The full project prioritization process for the PSRC Plan is described in Appendix P, which is a new component of the document that was added during the Transportation 2040 Update Report process. Projects are grouped into 4 categories: "State of Good Repair, Regional System Expansion, Programmatic Investments, and Local Projects." The project evaluation process was applied to all but local projects, since those are identified through regional priorities. "The prioritization process includes 9 evaluation measures: Air Quality, Freight, Jobs, Multimodal, Puget Sound Land &Water, Safety and System Security, Social Equity & Access to Opportunity, Support for Centers, and Travel." "A scorecard was used to rate each project, and also includes the project cost in 2008 dollars, decade of completion, and whether projects in the Constrained or Unprogrammed section of the Plan," (Transportation 2040 Plan, Appendix P, page 6).	• The Plan had a multi-level project evaluation process. "Plan Bay Area is based on a commitment to evaluate individual transportation projects to make sure dollars are being allocated to the most cost-effective projects. In order to take a closer look at major transportation projects, MTC performed a project performance assessment, examining billions of dollars of potential transportation projects to identify the highest-performing investments across the region. This enabled funding prioritization for the highest-performing projects. Most of them focused on leveraging existing assets and improving their efficiency, while supporting future development. • Notable projects include BART Metro, which will increase service frequencies on the highest-demand segment of the BART system, and San Francisco's congestion pricing initiatives. (See Chapter 5 for a list of high-performing projects.)" • In addition, a second level of review was conducted on the projects. Using a benefit-cost ratio of 1 as a threshold, any agency that submitted a project that scored less than 1 had to provide a justification summary as to why it should be included in the Plan. Any low-scoring projects that are in the Plan are likely in the Plan because of positive impacts on social justice and equity concerns, which isn't fully represented in the benefit-cost ratio/target analysis, (page 114).	• In the Plan, projects are divided into two categories: "those that are regionally significant for air quality conformity purposes, and those that are not. Regionally significant projects must be listed individually in the RTP, and the transportation networks containing these projects must be modeled to demonstrate compliance with federal air quality conformity requirements. Non-regionally significant projects are not identified in the 2040 LRTP. Rather, estimated expenditure amounts are listed by project type through 2040. Non-regionally significant projects are developed by project sponsors and identified in short-range TIPs." The regionally significant projects are major roadway, interchange, and rapid transit projects that significantly change the capacity of the transportation network." "Ten criteria were used to evaluate the capacity and bus rapid transit (BRT) projects: Congestion Severity; Cost per Peak Period Person Mile Traveled (PMT); Gap Closure; Arterial Roadway Spacing; Regional Roadway System Classification; Serves Urban Centers /Rural Town Center; Safety Measure; Urban Growth Boundary/Area; Serve Major Intermodal/or High Security Facility; and Rapid/Frequent Transit Service," (page 72). The project selection process is outlined on pages 23-30. A more in-depth explanation of the project evaluation process can be found in Appendix 1.	• The Plan's goal areas with associated guiding policies are identified in the Plan. The goal areas include: "1. Align the Plan investments and policies with improving regional economic development and competitiveness. 2. Maximize mobility and accessibility for all people and goods in the region. 3. Ensure travel safety and reliability for all people and goods in the region. 4. Preserve and ensure a sustainable regional transportation system. 5. Maximize the productivity of our transportation system. 6. Protect the environment and health of our residents by improving air quality and encouraging active transportation (e.g., bicycling and walking). 7. Actively encourage and create incentives for energy efficiency, where possible. 8. Encourage land use and growth patterns that facilitate transit and active transportation. 9. Maximize the security of the regional transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies," (page 64) • The project prioritization process is not discussed.	• Not Reviewed

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Plan Development	Public Involvement Techniques			X	• In the Plan, MindMixer was used to serve as a platform for public involvement during the planning process. This platform allows the public to view and comment on the Plan, as well as submit ideas or suggestions related to the process, and is outlined in Chapter 7, page3-4.	• The public involvement process that was used in the development of the Plan came from "The Atlanta Region's Plan Stakeholder Involvement Program. It outlines a robust program of activities with local governments in the Atlanta Region as well as other stakeholders to ensure that broad input and support for Plan goals, policies, transportation investments and programs are achieved," (page 74). "Three broad audiences were identified within the jurisdictions served by ARC: (1) Policy-making elected/appointed officials from local, regional and state jurisdictions. This also included interaction with federal officials who establish and review rules and regulations in the planning process. Public planning partner staffs, which prepare their jurisdictional plans, provide background information on local issues and advise officials, were targeted within this audience. (2) State and local private sector leadership and interested people within special interest groups that consistently engage in issues related to The Atlanta Region's Plan. (3) Individuals or groups that participate in ARC activities based on short-term, issue-driven concerns," (page 74). • The public involvement process is also included in the "Regional Community Engagement Report." (Appendix K, page 1039).	• In the Plan, the public involvement process is described in Appendix I of the Transportation 2040 Plan. "PSRC employed a range of tools and techniques which are standard procedure for regional outreach. Communication and outreach activities are organized under four headings: (1) Presentations and Meetings / Interagency Consultation, (2) Written and Printed Materials, (3) Digital and Electronic Materials, and (4) Other Each of the techniques employed throughout the Plan update process are described (in Appendix I) along with an evaluation of its effectiveness," (Transportation 2040 Plan, Appendix I, page 6).	• In the Plan, public involvement techniques for Plan development include: "Three statistically valid telephone polls, 29 public workshops or hearings, 8 additional public hearings, community surveys, meetings, website and social media presence, a virtual public workshop, and county-based meetings," (page 28).	• In the Plan, the public involvement component of the Plan is listed on page 58. "The public provided input towards developing the 2040 RTP through the following activities: - Notification of events and review documents via DRCOG website; - Scenario planning workshop and 2040 Plans kickoff (June 2012); - DRCOG Listening Tour (Spring 2012); - CDOT Town Hall (May 2014); - DRCOG/DRMAC Transit Forum (May 2014); - CDOT/DRCOG Transit Open House (May 2014); - More than 20 DRCOG Board and committee meetings covered 2040 RTP topics, and - Public hearings in January/February 2013, July 2013, April 2014, and January 2015," (page 59).	• In the Plan, "public outreach was integral to the development of the entire RTP/SCS, but particularly during the refinement of scenarios. To ensure that the 2016 RTP/SCS was developed openly and inclusively, the agency implemented a comprehensive public outreach and involvement program. This was based on a Public Participation Plan adopted by SCAG's Regional Council in April 2014. Specific public engagement strategies used during the development of the Draft 2016 RTP/SCS included: (1) Developing materials for public outreach in a variety of formats to reach broad audiences, including a short video, fact sheets, surveys, PowerPoint presentations and poster boards. (2) Centralizing RTP/SCS information on a new easy-to-use microsite, developed to be mobile/tablet friendly and compliant with the 1990 Americans with Disabilities Act. (3) Supporting multiple committees, task forces and working groups made up of SCAG partners, stakeholders and interested groups to develop the key components of the Plan. (4) Holding multiple public open houses before the release of the Draft RTP/SCS, to allow direct and interactive participation with interested parties, (5) Announcing the schedule for the open houses through a wide variety of means, including community calendars, distributing flyers at local events and libraries, email newsletters, social media and ethnic media. (6) Seeking the assistance of	• Not Reviewed

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										transit agencies, stakeholder organizations and their communication channels to maximize outreach opportunities. (7) Reaching out to traditionally underrepresented and/or underserved audiences. (8) Evaluating public participation activities to continually improve the outreach process" (page 66). • The public participation component of the Plan is identified in the "Public Consultation" component of the Appendix, as well as in the document on page 66-68.	

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Plan Development	Was Scenario Planning used?	X (Optional)			• No	• In the Plan, scenario planning is discussed on page 197. "Three scenarios are considered: technological advancement, autonomous vehicles, and transit connected regional centers. The exercise attempted to determine likely or possible outcomes of advancements in communication technology for work, residential, and transportation decisions of residents, businesses, and transit providers in the Atlanta region; potential effects of new vehicle technology to help revise and prioritize what types of transportation investments are made in the region; and potential outcomes of focusing growth around transit connected regional centers to inform future efforts to revise and prioritize the regional unconstrained vision for transit expansion. Results from these scenario planning exercises are preliminary, but indicate that advancements in technology and growth patterns have the potential to alter the way people conduct their daily lives. The next step is to further explore these and other drivers of change to inform and refine the Region's development and investment strategies," (page 197).	• In the Plan, scenario planning was used for the financial section. A general funding scenario was created where "necessary revenues would become available, that would also retain the flexibility that allows specific new revenue actions to be defined and implemented by appropriate governmental bodies. The new revenue "general scenario" will require legislative action within the next few years across a broad range of governments, including, cities, counties, the state and the federal government. As the regional planning body for the central Puget Sound region, PSRC will work collectively with its partners to advance appropriate legislative actions. The general funding scenario has three primary elements: (1) early revenue actions that support state, local, and regional investments, (2) a phasing in of new revenue sources that are based on the use of the transportation system, and (3) guidance on the use of tolling revenues," (Transportation 2040 Plan, Appendix F, page 35-36).	• "Taken together, the Plan Bay Area performance targets outline a framework that allows us to better understand how different projects and policies might affect the region's future. With the targets clearly identified, MTC and ABAG formulated possible "visioning" scenarios- combinations of land use patterns and transportation investments- that could be evaluated together to see if (and by how much) they achieved or fell short of the performance targets. Obviously, the goal is to identify the most promising scenario, especially with respect to the attainment of the statutory requirements for greenhouse gas emission reductions and for the provision of an adequate amount of housing," (page 22). "An iterative process of scenario-testing begun in 2010 yielded preferred alternatives, both for transportation investments and a land use strategy. Adopted by the boards of MTC and ABAG in May in 2012, they form this Plan Bay Area," (page 6).	• A scenario planning workshop was held at the kickoff of the DRCOG Plan development process for the 2040 RTP (page 59). At the workshop, residents could provide input on the Plan visioning process, however, scenario planning was not incorporated into the modeling process for forecasting land use and transportation scenarios in 2040.	• In the Plan, scenario planning was used. "Scenarios were developed for forecasting growth, each one representing a different vision for land use and transportation in 2040. More specifically, each scenario was designed to explore and convey the impact of where the region would grow, to what extent the growth would be focused within existing cities and towns and how it would grow- the shape and style of the neighborhoods and transportation systems that would shape growth over the period. Refinement of these scenarios led to a "preferred scenario" that helped guide the strategies, programs and projects detailed in the Plan," (Chapter 1 page 6). • Scenario planning is also discussed on page 68- 71.	• Not Reviewed

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Plan Development	Was the Plan evaluated for successful implementation/ performance yearly or other?			X	• The Plan is reviewed periodically and potential actions to be taken during the planning period, which may include: • "addition of projects; • policies and investment options; • removal of existing actions and investments, if appropriate; • changes in the status of actions and investments within the Plan; • changes in the financial analysis underlying the Plan; and • changes due to new or updated federal legislation or regulation." (Chapter 7, page 14).	• "The ARC Region is committed to continuing the conversations with its planning partner agencies in 2017 and beyond until the rulemaking process is complete and a more robust performance monitoring and reporting structure is implemented," (pages 194-195).	• In the Plan, monitoring implementation and system performance is included in Chapter 6 of the Transportation 2040 Plan (page 91). The region has a system of planning, implementation, and monitoring. It is a cycle, where the update and development of the Plan is based on addressing issues identified through the monitoring and implementation of the previous Plan. The Plan uses performance policies and measures to determine the success of the Plan's implementation process, (Transportation 2040 Plan, page 91).	• The Plan is updated every 4 years, and forecasted performance was evaluated as the Plan was being developed. No continual monitoring process is discussed.	• The Plan includes a section that reviews the benefits and impacts of the 2040 Fiscally Constrained RTP. It includes measures to compare the performance of the 2015 transportation system to the 2040 fiscally constrained system (page 51-53). However, there is no section that tracks the status of projects after Plan implementation.	• "Implementing the Plan will require SCAG to continue working closely with all jurisdictions, just as it did during its development. In particular, SCAG will need to work with the six county transportation commissions responsible for managing and prioritizing the portfolio of transportation investments in their respective counties. SCAG also must work with the California Department of Transportation (Caltrans), transit operators, port and airport authorities, and other implementing agencies. In addition, the agency will have to work with the local jurisdictions and counties responsible for land use and transportation planning, and the air quality management districts in charge of monitoring conditions throughout the region. The agency will also have to work with key stakeholders including local public health departments to ensure that the Plan benefits the economy and promotes social equity. To ensure that the region makes progress on its goals, SCAG will monitor its own progress toward achieving its targets and will share this information with its partners and the public,"(page 16-17).	• Not Reviewed

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Air Quality	Air Quality Conformity- requirement to be in attainment for criteria pollutants: 1. Ozone 2. Particulate Matter 3. Lead 4. Carbon Monoxide 5. Sulfur Oxides 6. Nitrogen Oxides (NO2)	X			• In the Plan, air quality conformity is discussed in Chapter 7, page 11. Air quality impacts will continue to be considered in the regional transportation planning process. Many of the projects, policies, and programs that are included in the Plan and the TIP result in air quality benefits through improved efficiency of the regional transportation system. The results of the conformity determination process demonstrate that the Plan meets all of the specific transportation air quality requirements," (Chapter 7, page 13).	• Air quality conformity is discussed on pages 186-190 of the Plan. • "Over the past three years ARC, in partnership with the Georgia Environmental Protection Division, has developed a new tool to evaluate how transportation projects impact local-scale emissions exposure. This tool, named AREES, will help planners better understand how decisions on land use and transportation intersect public health," (page 211).	•In the Transportation 2040 Plan, maintaining and improving air quality is identified as a priority in the region, (page 32). They have identified three techniques to reducing emissions of air pollutants through: "the use of cleaner fuels and vehicles, increasing alternatives to driving alone, and land use strategies," (Transportation 2040 Plan, page 33).	• To improve air quality, the "Bay Area Air Quality Management District was created in the MTC region to manage a number of programs related to goods movement, including initiatives to support cleaner trucks within the region, and specifically at the Port of Oakland."- page 120. • "In December 2009 MTC programmed $80 million to implement the Climate Initiatives Program, a multi-faceted program aimed at reducing transportation-related emissions and vehicle miles traveled (VMT), while also informing the region as to the most effective strategies to reduce emissions. Since then, the program has funded innovative pilot projects to test the effectiveness of reducing emissions through incentives for alternative fuels and vehicles, creation of electric vehicle and bike-sharing programs, and removal of barriers to walking and biking for youth and their families, and other projects," (page 125).	• In the Plan, an air quality analysis of the 2040 RTP was prepared. It is consistent with the 2004 U.S. Environmental Protection Agency guidance. All criteria pollutants are forecast to decrease significantly through 2040, meaning that the 2040 RTP meets all federal air quality conformity requirements," (page 62). • Air quality conformity is also incorporated into the project selection process through the identification of "projects that are regionally significant for air quality conformity purposes and those that are not. Regionally significant projects must be listed individually in the RTP, and the transportation networks containing these projects must be modeled to demonstrate compliance with federal air quality conformity requirements," (page 27).	• In the short-term, the regional SCAG environmental strategy supports two components related to the improvement of air quality: "(1) The deployment of commercially available low emission trucks and locomotives while centering on continued investments into improved system efficiencies. (2) Applying ITS solutions to improve operational efficiency is also recommended. In the longer term, the strategy focuses on advancing technologies—taking critical steps now toward the phased implementation of a zero- and near zero-emission freight system. SCAG is cognizant of the need to incorporate evolving technologies with plans for new infrastructure. These include technologies to fuel vehicles, as well as to charge batteries and provide power," (page 117).	• Not Reviewed

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Use of Innovative Strategies/Technologies	Autonomous Vehicles/Connected Vehicles/On-Demand Services		X	X	• To promote the use of transit and rideshare services, several programs have been launched in the NYMTC planning area. 511NY Rideshare is a region wide program that provides information to travelers on transit routes, ride-matching services, walking and biking routes and walk/bike to work programs, first-mile/last-mile shuttle service information, vanpools, transit trip planners, guaranteed ride home programs and other educational material related to transit demand management. Numerous employers in the NYMTC planning area offer incentives for employees to utilize transit services to get to work, such as parking cash-out programs, which provide employees with a cash stipend instead of a free or subsidized parking space if they choose to use other modes of transportation to and from the workplace.	• Autonomous vehicles have been incorporated as a scenario alternative into the Plan, along with two other scenarios: technological advancement, and transit connected regional centers. "The exercise attempted to determine likely or possible outcomes of advancements in communication technology for work, residential, and transportation decisions of residents, businesses, and transit providers in the Atlanta region; potential effects of new vehicle technology to help revise and prioritize what types of transportation investments are made in the region; and potential outcomes of focusing growth around transit connected regional centers to inform future efforts to revise and prioritize the regional unconstrained vision for transit expansion. Results from these scenario planning exercises are preliminary, and the next step is to further explore these and other drivers of change to inform and refine the Region's development and investment strategies," (page 197). Autonomous vehicles are also discussed on page 198.	• Not mentioned	• In the Plan, autonomous vehicles are mentioned as an innovative technology that planners will be researching in years to come. "In late 2012, California, Florida and Nevada cleared some early legal hurdles by directing their state departments of motor vehicles to adopt rules regarding safe operations, insurance and privacy. Elements of driverless technology are also being researched with regard to transit vehicles, with a focus on enhancing safety of bus rapid transit (BRT) systems,"(page 124).	• Not mentioned	• "The SCAG region can expect to see significant growth in the deployment and use of automated vehicles. By some estimates, automation features being introduced within the next five years could be available in up to 70 percent of the vehicles on the road in 2040. The following are some examples of automated driving features that need to be considered and supported. There are a wide range of demonstration projects that could be pursued by SCAG and its partners, in collaboration with private sector organizations with increased federal, state and local funding: (1) Jam-Assist and Advanced Collision Avoidance: Combining advanced collision detection and avoidance technology currently in development, vehicles will operate "hands-off" and "feet-off" on highways. These features could also improve operation in low-speed environments. Equipping transit vehicles with jam assist could dramatically improve vehicle throughput in congested transit-only corridors, or in Bus Rapid Transit systems. (2) Semi-Automated Mode Vehicles: Vehicles will operate without driver input under certain limited conditions, while requiring driver input for most portions of the trip. This is the current state of technology with the Google car. However, safety and traffic benefits will begin to spread throughout the roadway network as this technology advances.	• Not Reviewed

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										Vehicles will be able to operate without driver input, although the driver will need to monitor the vehicle's operation. These features could be available in both consumer and commercial vehicles as early as 2018–2020 and could represent a sizable minority of the fleet mix as early as 2030–2035. (3)Fully Automated Mode Vehicles: Vehicles will operate without driver input in certain conditions, requiring driver input for other portions of the trip. Most researchers agree that this will be the mid-term state of vehicle automation. In highway driving conditions, drivers will turn over full control of the vehicle and vehicle systems will communicate with one another. Vehicles will be able to form "platoons" in order to operate at closer distances (less than 1.8 seconds apart in one Japanese study) in order to improve fuel consumption and traffic flows. Freight industry representatives are interested in whether the National Highway Traffic Safety Administration (NHTSA) will waive driver work hour limits for following vehicles under platooning conditions. In low-speed conditions, "platooning" could improve transit bus operations and automation could improve bus/curb alignment. To some researchers, this could facilitate a new business model of mobility—as a service similar to the way cellphone plans are priced, especially in dense urban areas.	

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										(4) Fully Automated Vehicles: Vehicles will operate without driver input, but will still require a driver to monitor the vehicle. The vehicle will navigate trips from beginning to end and possibly self-park within low-speed environments. This technology could potentially be available as early as 2025–2030, but it will not be used in a significant share of vehicles until 2035–2040. (5) Fully Autonomous Vehicles: Passenger vehicles will operate with or without drivers, resulting in radical changes to urban form. Cars will park themselves, attend to maintenance and refueling, or alter ownership patterns so that they stay in constant circulation. Driverless taxi, freight and transit vehicles could have a dramatic impact on various professional driving careers," (page 182).	

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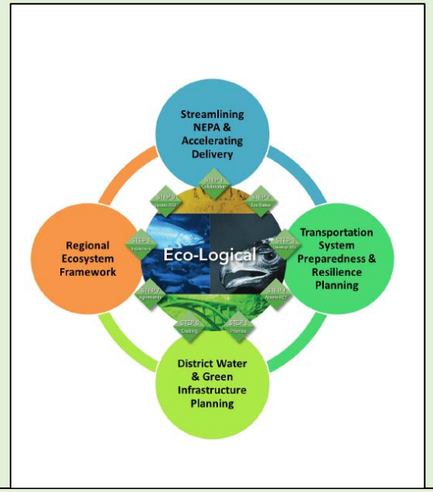
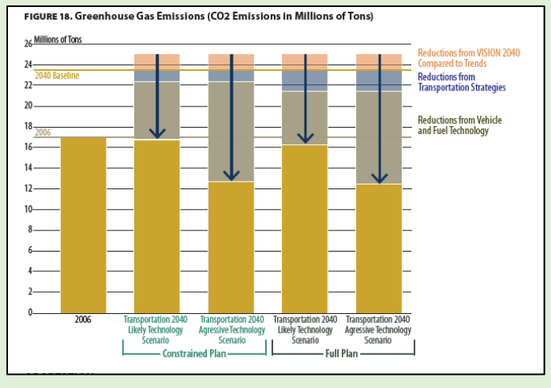
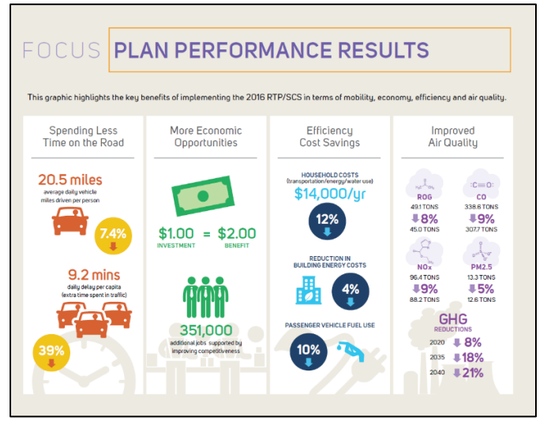
Criteria	Innovative Visualization/Graphics	Criteria	Innovative Visualization/Graphics
Plan 2040: Regional Transportation Plan- A Shared Vision for a Sustainable Region, NYMTC	• None	**Plan Bay Area, Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area, 2013-2040, MTC**	• None
The Atlanta Region's Plan Transportation Element, ARC	• Innovative graphic on page 58- "Eco-Logical Approach." 	**2040 Fiscally Constrained Regional Transportation Plan (RTP), DRCOG**	• None
Transportation 2040: Toward a Sustainable Transportation System Plan and Transportation 2040 Update Report, PSRC	• Innovative graphic on page 36- "Greenhouse Gas Emissions" 	**The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, A Plan for Mobility, Accessibility, Sustainability, and a High Quality of Life, SCAG**	• Innovative graphic on page 152- "Performance Results". 

Miami-Dade Transportation
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